```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 4.00...4.10
                                                       Prestroke mm
                                                                          (3.95...4.15)
                                                       Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                       Cam sequence : 6- 3- 5- 2- 4- 1
Test sheet
                   : MB 11,0 S 5
                    : 10.08.87
Edition
Superceeded
                                                       SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
                   : 0 401 846 833
Combination no.
                                                       SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3835
                                                       BASIC SETTING
EP type number : 0 411 816 749
                                                       1st speed 1/mi: 900
Governor
Governor design. : RQ300/900PA827-2K
                                                       Contr.-rod trav.mm: 13.60...13.70
Governer no.
                   : 0 421 803 094
                                                       Del.quantity cm3/: 13.3...13.5
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                                     100H.: (13.0...13.7)
Engine
                    : 0M441
                                                                     cm3/:0.4
                                                       Dispersion
1st version kW : 150.0
              1/min: 1800
Speed
                                                                     100H.: (0.8)
                                                      2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/: 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/: 0.4
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                    : 38...42
Overflow valve
                                                                     100H.: (0.7)
                    : 1 417 413 025
                                                       (B) Setting of injection pump with
Inlet press., bar: 1.50
                                                           externally-mounted governor
Overflow
                                                       SLEEVE TRAVELS
 quantity min. 1/h: 100...120
                                                       1st speed 1/min: 300
                                                         Sleeve travel mm: 1.40...1.60
                                                      2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70
3rd speed 1/min: 775
Sleeve travel mm: 6.50...6.80
Calibrating nozzle-holder
             : 0 681 343 009
 assembly
Opening
 pressure, bar : 172...175
                                                       4th speed 1/min: 880
Sleeve travel mm: 7.20...7.50
                                                       5th speed 1/min: 960
Test inj. tubing : 1 680 750 015
                                                         Sleeve travel mm: 9.50...10.10
Outside diameter
                                                       SLEEVE POSITION
x Wall thickness
                                                       Control-lever position
                   : 6.00x1.50x600
                                                                    Degree: -2
x Length mm
                                                                     17min: 600
                                                       Speed
                                                      Cont.-rod travelmm: 14.70...15.70
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                       1st version
                                                                     1/min: 900
START OF DELIVERY
                                                      Speed
                                                      Del.quantity cm3/: 133.0...135.0
Test pressure, bar: 25...27
                                                                    1000H.: (130.5...137.5)
```

Dispersion cm3/ : 4.00 1000H .: (8.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 36...44 Setting point: 1/min : 600 Speed Contr.-rod trav.mm: 15.2 Testing: 1st c-rod trav.mm : 12.70 1/min: 945...960 Speed 2nd c-rod trav.mm : 4.00 1/min: 990...1020 Speed 4th speed 1/min : 1300 C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Control-lever position degrees: 9...17 Setting point w/out aux. spring 1/min : 300 Speed Contr.-rod trav.mm: 8.8 Testing: Speed 1/min : 100 C-rod trav.mm min : 10.50 1/min : 300 Speed C-rod trav.mm : 8.80...8.90 C-rod trav.mm : 2.00 1/min : 450...490 Speed 1/min : 550 Speed C-rod trav.mm max : 1.80 TORQUE CONTROL Dimension a mm : 2.00 Torque-control curve - 1st version 1/min : 900 1st speed C-rod trav.mm : 13.60...13.70 1/min : 600 2nd speed C-rod trav.mm : 13.20...13.40 3rd speed 1/min : 750 C-rod trav.mm : 13.30...13.50 FUEL-DELIVERY CHARACTERISTICS 1/min : 600 Speed Del.quantity cm3/: 123.0...126.0 1000H.: (120.0...129.0) Dispersion cm3/: 6.00 1000H.: (9.00) 1/min : 750 Speed Del.quantity cm3/: 127.0...131.0 1000H.: (124.0...134.0) Dispersion cm3/: 6.00 1000H.: (9.00) ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 12.70 Speed 1/min: 945...960

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 120.0...140.0 1000H.: (116.0...144.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 11.0 S 6
Edition : 14.08.87
Superceeded : 6.10.86
Calibrating oil : ISO-4113

Combination no. : 0 401 846 834

Injection pump

Pump designation : PE6P110A320LS3835 EP type number : 0 411 816 749

Governor

Governor design. : RQ300/1050PA827-4K Governer no. : 0 421 803 096

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : 0M441

1st version kW : 160.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                      : 4.00...4.10
                                                            Dispersion cm3/ : 4.00
                      : (3.95...4.15)
                                                                           1000H.: (8.00)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 6- 3- 5- 2- 4- 1
                                                            HIGHEST RATED SPEED
                                                            1st version
                                                            Control-lever
                                                             position degrees: 32...40
SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
                                                            Setting point:
                                                            Speed
                                                                          1/min : 600
SD mark cyl. no. : 6
                                                            Contr.-rod trav.mm: 15.2
BASIC SETTING
                                                            Testing:
                                                            1st c-rod trav.mm : 12.30
Speed 1/min : 1095...1110
2nd c-rod trav.mm : 4.00
               1/mi: 1050
1st speed
                                                            Speed 1/min: 1150...1180
4th speed 1/min: 1300
Contr.-rod trav.mm: 13.30...13.40
Del.quantity cm3/ : 13.9...14.1
                                                               C-rod tray.mm : 0.00...1.50
                100H.: (13.6...14.3)
                                                            LOWEST RATED SPEED I
                                                            Control-lever
                cm3/:0.4
Dispersion
                                                             position degrees: 8...16
                                                            Setting point w/out aux. spring
                                                            Speed 1/min : 300
                100H.: (0.8)
                                                            Contr.-rod trav.mm: 8.8
2nd speed
                1/min: 300.0
Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/: 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/: 0.4

100H.: (0.7)
                                                            Testing:
                                                                           1/min : 200
                                                            Speed
                                                            C-rod trav.mm min : 10.50
Speed 1/min : 300
                                                            C-rod trav.mm : 8.80...8.90
                                                                                 : 2.00
                                                            C-rod trav.mm
                                                                          1/min : 450...490
1/min : 550
                                                            Speed
Speed
(B) Setting of injection pump with
     externally-mounted governor
                                                            C-rod trav.mm max: 1.80
SLEEVE TRAVELS
1st speed 1/min: 300
Sleeve travel mm: 1.30...1.50
                                                            TORQUE CONTROL
                                                            Dimension a mm : 2.00
2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70
                                                            Torque-control curve - 1st version
                                                            1st speed 1/min : 1050
                                                              C-rod trav.mm : 13.30...13.40
3rd speed 1/min: 900
  Sleeve travel mm: 6.90...7.20
                                                                         1/min : 600
                                                            2nd speed
4th speed 1/min: 1050
Sleeve travel mm: 7.60...7.90
5th speed 1/min: 1100
Sleeve travel mm: 10.10...10.60
                                                               C-rod trav.mm : 13.20...13.40
                                                            3rd speed 1/min: 900
                                                               C-rod tray.mm : 13.40...13.60
                                                            FUEL-DELIVERY CHARACTERISTICS
                                                            Speed
SLEEVE POSITION
                                                                          1/min : 600
                                                            Del.quantity cm3/: 124.0...127.0
1000H.: (121.0...130.0)
Control-lever position
              Degree: -2
                                                            Dispersion cm3/: 6.00

1000H.: (9.00)

Speed 1/min: 900

Del.quantity cm3/: 130.0...134.0

1000H.: (127.0...137.0)

Dispersion cm3/: 6.00
               17min: 600
Speed
Cont.-rod travelmm: 14.70...15.70
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
                                                                           1000H.: (9.00)
Speed
                1/min: 1050
Del.quantity cm3/: 139.0...141.0
1000H.: (136.5...143.5)
                                                            ROTATIONAL-SPEED LIMITATION
A05
```

1st version 1mm control-rod travel less than full-load trav.mm: 12.30 Speed 1/min: 1095...1110 STARTING FUEL DELIVERY Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11.7 D2
Edition : 18.09.87
Superceeded : 22.5.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 835

Injection pump

Pump designation : PE6P12OA32ORS3183-1 EP type number : 0 411 826 758

Governor

Governor design. : RQ250/1000PA832 Governer no. : 0 421 801 368

Customer-spec. information Customer : DAF

Engine : WS 259

1st version kW : 259.0 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00x1.56x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                    : 3.70...3.80
                    (3.65...3.85)
                                                       LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                       Setting point w/out aux. spring
Cam sequence
                    : 1-5- 3- 6- 2- 4
                                                       Speed 1/min : 250
                                                       Contr.-rod trav.mm: 7.3
                                                       Testing:
SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                                                       Speed
                                                                    1/min : 100
                                                       C-rod trav.mm min: 8.80
                                                                    1/min : 250
                                                       Speed
BASIC SETTING
                                                       C-rod trav.mm : 7.20...7.40
                                                                   mm : 2.00
1/min : 350...390
                                                       C-rod trav.mm
1st speed
                1/mi: 850
                                                       Speed
Contr.-rod trav.mm: 12.60...12.70
                                                       TORQUE CONTROL
                                                       Torque-control curve - 1st version
Del.quantity cm3/: 20.0...20.2
                                                                   1/min : 850
                                                       1st speed
                                                         C-rod trav.mm : 12.60...12.70
               100H.: (19.7...20.5)
                                                       2nd speed 1/min : 1000
                                                         C-rod trav.mm : 12.50...12.70
               cm3/:0.5
Dispersion
                                                        compensator (LDA,ADA,ALDA)
               100H.: (0.9)
2nd speed 1/min: 250
Contr.-rod trav. m: 7.2...7.4
Del.quantity cm3/: 1.6...2.2
                                                       1st version
                                                       Setting
                                                                    1/min : 600
                                                       Speed
               100H.: (1.3...2.5)
cm3/: 0,8
100H.: (1.2)
                                                       Pressure
                                                                   hPa : 1000
                                                       Contr.-rod trav.mm: 12.60...12.70
Dispersion
                                                       Measurement
SLEEVE POSITION
                                                                    1/min : 600
                                                       Speed
Control-lever position
              Degree: -1
                                                       1st pressure hPa
               17min: 550
                                                                           : 10.60...10.80
                                                         C-rod trav.mm
Cont.-rod travelmm: 15.60...16.40
                                                       2nd pressure hPa : 430
                                                       C-rod trav.mm : 12.10...12.20
3rd pressure hPa : 280
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                         C-rod trav.mm : 11.00...11.20
1st version
Speed 1/min: 850
Charge press. hPa: 1000
Del.quantity cm3/: 200.0...202.0
1000H.: (197.0...205.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                                                       FUEL-DELIVERY CHARACTERISTICS
                                                       Charge press. hPa : -
                                                                    1/min : 600
                                                       Speed
                                                       Del.quantity cm3/: 144.0...146.0
1000H.: (141.0...149.0)
                                                       ROTATIONAL-SPEED LIMITATION
HIGHEST RATED SPEED
                                                       1st version
                                                       1mm control-rod travel less than
Setting point:
          1/min : 550
Speed
Contr.-rod trav.mm: 16.0
                                                        full-load trav.mm: 11.60
                                                                    1/min : 1035...1050
                                                       Speed
Testing:
                                                       STARTING FUEL DELIVERY
1st c-rod trav.mm : 11.60
             1/min : 1035...1050
  Speed
2nd c-rod trav.mm : 4.00
            1/min : 1125...1155
                                                       Speed
                                                                   1/min : 100
  Speed
                                                       Del.quantity cm3/: 260.0...300.0
             1/min : 1250
4th speed
                                                                    1000H.: (256.0...304.0)
  C-rod trav.mm : 0.00...1.00
80A
```

LOW IDLE

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10.0 S1 Edition : 18.09.87 Superceeded : -

Calibrating oil : ISO-4113

Combination no. : 0 401 846 836

Injection cump

Pump designation : PE6P12OA32ORS3186 EP type number : 0 411 826 756

Governor

Governor design. : RQV250..1100PA657-1 Governer no. : 0 421 813 414

Customer-spec. information Customer : VOLVO

: TD102FD9 Engine

1st version kW : 232.0 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

Del.quantity cm3/: 197.0...199.0 Prestroke mm : 2.60...2.70 : (2.55...2.75) 1000H.: (194.0...202.0) Contr.-rod trav.mm: 9.00...12.00 Dispersion cm3/ : 5.00Cam sequence : 1-5-3-6-2-4 1000H.: (9.00) HIGHEST RATED SPEED 1st version SD ang. spacing⁰CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) Control-lever position degrees: 56...64 SD mark cyl. no. : 1 Testing: 1st c-rod trav.mm : 10.40 BASIC SETTING Speed 1/min: 1130...1140 2nd c-rod trav.mm : 4.00 Speed 1/min: 1185...1215 1/mi: 700 1st speed 4th speed 1/min: 1350 C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 11.40...11.50 Del.quantity cm3/ : 19.7...19.9 LOWEST RATED SPEED I Control-lever 100H.: (19.4...20.2) position degrees: 4...12 Dispersion cm3/:0.5Testing: Speed 1/min : 100 C-rod trav.mm min : 5.40 Speed 1/min : 250 C-rod trav.mm : 3.90...4.10 100H.: (0.9) 2nd speed 1/min: 250 Contr.-rod trav. m: 3.9...4.1 Del.quantity cm3/: 1.7...2.2 CONSTANT REGULATION 100H.: (1.4...2.4) cm3/: 0.5 100H.: (0.7) 1/min : 250...360 Speed Dispersion compensator (LDA, ADA, ALDA) (B) Setting of injection pump with externally-mounted governor 1st version Setting 1/min : 500 SLEEVE TRAVELS Speed Pressure hPa : 1000 1st speed 1/min: 250 Contr.-rod trav.mm: 11.40...11.50 Sleeve travel mm: 1.00...1.40 2nd speed 1/min: 350 Steeve travel mm: 2.20...2.80

3rd speed 1/min: 700

Steeve travel mm: 6.40...6.60

4th speed 1/min: 1135

Steeve travel mm: 7.70...7.90 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 8.60...8.80 5th speed 1/min: 1210 2nd pressure hPa : 80 Sleeve travel mm: 8.90...9.30 C-rod trav.mm : 8.90...9.00 3rd pressure hPa : 460 SLEEVE POSITION C-rod trav.mm : 11.00...11.20 Control-lever position Degree: -1 Speed 1/min: 1170 Cont.-rod travelmm: 15.20...17.80 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Speed 1/min : 700 Del.quantity cm3/: 143.0...145.0 FULL-LOAD DELIV. AT FULL-LOAD STOP 1000H.: (140.0...148.0) 1st version ROTATIONAL-SPEED LIMITATION 1/min: 700 Speed Charge press. hPa : 1000 1st version

1mm control-rod travel less than

full-load trav.mm: 10.40 peed 1/min: 1130...1140 Speed

LOW IDLE

1000H.: (7.00)

Delivery-valve spring pre-tension = 2.40...2.60 mm.

Permissible alteration from 2.20...2.90

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BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
Test sheet
                     : VOL 10.0 T : 21.08.87
                                                         SD mark cyl. no. : 1
Superceeded
Caliboati
Edition
                     : 9.3.87
                                                         BASIC SETTING
Calibrating oil : ISO-4113
                                                         1st speed
                                                                         1/mi: 700
Combination no.
                     : 0 401 846 838
                                                         Contr.-rod trav.mm: 13.00...13.10
Injection pump
Pump designation : PE6P110A320RS3152
                                                         Del.guantity cm3/: 17.5...17.7
                     : 0 411 816 746
EP type number
                                                                        100H.: (17.2...18.0)
Governor
Governor design.
                     : RQV250...1100PA589
Governer no.
                                                                        cm3/:0.4
                   : 0 421 813 307
                                                         Dispersion
Customer-spec. information
                                                                        100H.: (0.7)
Customer
                     : VOLVO-BM
                                                         2nd speed 1/min: 250.0
Contr.-rod trav. m: 3.9...4.1
Del.quantity cm3/: 1.5...1.9
Dispersion cm3/: 0.4
Engine
                     : TD102
TEST BENCH REQUIREMENTS
                                                                        100H.: (0.7)
Calibrating-oil inlet temp. OC
                     : 38...42
                                                          (B) Setting of injection pump with
                                                              externally-mounted governor
Overflow valve
                     : 1 417 413 025
                                                         SLEEVE TRAVELS
                                                         1st speed 1/min: 250
                                                         Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 350
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                           Sleeve travel mm: 2.20...2.70
                                                         3rd speed 1/min: 450
Sleeve travel mm: 3.70...4.10
4th speed 1/min: 750
Sleeve travel mm: 6.40...6.60
               : 0 681 343 009
 assembly
Opening
 pressure, bar : 172...175
                                                         5th speed 1/min: 1160
                                                           Sleeve travel mm: 8.10...8.30
Test inj. tubing : 1 680 750 015
                                                         SLEEVE POSITION
Outside diameter
                                                         Control-lever position
                                                         Degree: -1
Speed 1/min: 1180
Cont.-rod travelmm: 15.20...17.80
x Wall thickness
                     : 6.00x1.50x600
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                         1st version
                                                                        1/min: 700
                                                         Speed
                                                         Charge press. hPa: 1000
Del.quantity cm3/: 175.0...177.0
1000H: (172.0...180.0)
START OF DELIVERY
Test pressure, bar: 25...27
                     : 3.50...3.60
                                                                       cm3/ : 4.00
Prestroke mm
                                                         Dispersion
                     : (3.45...3.65)
                                                                       1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5- 3- 6- 2- 4
                                                         HIGHEST RATED SPEED
                                                         1st version
```

```
Control-lever
 position degrees: 59...67
Testing:
1st c-rod trav.mm : 12.00
  Speed 1/min: 1160...1170
2nd c-rod trav.mm : 4.00
  Speed
           1/min: 1220...1250
4th speed 1/min: 1350
  C-rod tray.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 4...12
Testing:
            1/min : 100
Speed
C-rod tray.mm min : 5.40
Speed 1/min : 250
                 : 3.90...4.10
C-rod trav.mm
CONSTANT REGULATION
           1/min : 250...360
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
           hPa : 1000
Pressure
Contr.-rod trav.mm: 13.00...13.10
Measurement
            1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm : 11.50...11.60
2nd pressure hPa : 480
  C-rod trav.mm : 12.80...12.90
3rd pressure hPa : 340
  C-rod trav.mm : 11.80...12.00
FUEL-DELIVERY CHARACTERISTICS
           1/min : 700
Speed
Del.quantity cm3/ : 152.0...154.0
            1900H.: (149.0...157.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 12.00
          1/min : 1160...1170
Speed -
STARTING FUEL DELIVERY
Speed
         1/min : 100
A14
```

Del.quantity cm3/: 160.0...190.0 1000H.: (156.0...194.0) Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 3.90...4.10 Del.quantity cm3/: 15.0...19.0 Dispersion cm3/: 4.50 1000H.: (7.50)

Remarks:
Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm
APPLICATION
Dumper

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                       : 3.70...3.80
                                                    Prestroke mm
                                                                       : (3.65...3.85)
Note inst. in remarks column
                                                    Contr.-rod trav.mm: 9.00...12.00
                                                    Cam sequence : 1- 5- 3- 6- 2- 4
                   : DAF 11.7 E1
: 18.09.87
Test sheet
Edition
                   : 15.5.87
Superceeded
                                                    SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                   : ISO-4113
Calibrating oil
Combination na.
                   : 0 401 846 839
                                                    BASIC SETTING
Injection pump
Pump designation : PE6P12OA52OR$3183-1Y
                                                    1st speed
                                                                 1/mi: 850
EP type number
                   : 0 411 826 765
                                                    Contr.-rod trav.mm: 13.10...13.20
Governor
Governor design. : RQV250...1000PA851
Governer no. : 0 421 813 604
                                                    Del.quantity cm3/: 21.9...22.1
Customer-spec. information
                                                                  100H.: (21.6...22.4)
Customer
                  : DAF
                                                                 cm3/:0.5
                                                    Dispersion
                   : WS 282
Engine
                                                                  100H.: (0.9)
1st version kW : 282.0
            1/min: 2000
                                                                  1/min: 250.9
Speed
                                                    2nd speed
                                                    Contr.-rod trav. m: 6.8...7.0
TEST BENCH REQUIREMENTS
                                                    Del.quantity cm3/ : 1.4...2.0
                                                                 100H.: (1.1...2.3)
cm3/: 0.8
100H.: (1.2)
Calibrating-oil inlet temp. °C
                                                    Dispersion
                   : 38...42
Overflow valve
                                                    (B) Setting of injection pump with
                   : 1 417 413 025
                                                        externally-mounted governor
Inlet press., bar : 1.50
                                                    SLEEVE TRAVELS
                                                    1st speed 1/min: 250
Sleeve travel mm: 1.30...1.70
Calibrating nozzle-holder
                                                   2nd speed 1/min: 400
Sleeve travel mm: 3.20...3.60
              : 1 688 901 019
 assembly
                                                    3rd speed
                                                                1/min: 800
Opening
                   : 207...210
                                                      Sleeve travel mm: 5.80...6.20
 pressure, bar
                                                    4th speed 1/min: 1000
                                                      Sleeve travel mm: 7.90...8.10
Perforated-plate
 diameter mm
                   : 0,8
                                                    SLEEVE POSITION
                                                    Control-lever position
Test inj. tubing : 1 680 750 067
                                                                Degree: -1
                                                                 1/min: 1040
Outside diameter
                                                    Cont.-rod travelmm: 15.20...17.80
x Wall thickness
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 6.00x1.50x1000
x Length mm
(A) Injection pump setting values
                                                   1st version
                                                   Speed
                                                                 1/min: 850
    Insp. values in parentheses
                                                   Charge press. hPa : 1000
    Set constant delivery quant.
                                                   Del.quantity cm3/: 219.0...221.0
    per values
                                                                1000H.: (216.0...224.0)
                                                   Dispersion cm3/: 5.00
1000H.: (9.00)
START OF DELIVERY
Test pressure, bar: 25...27
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 51...59 Testing: 1st c-rod trav.mm : 12.10 1/min: 1040...1050 Speed 2nd c-rod trav.mm : 4.00 1/min : 1130...1160 1/min : 1250 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 15...23 Testing: Speed 1/min : 100 G-rod trav.mm min: 8.50 Speed 1/min : 250 C-rod trav.mm : 6.80...7.00 CONSTANT REGULATION 1/min: 275...385 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 600 Speed hPa : 1000 Pressure Contr.-rod trav.mm: 13.10...13.20 Measurement 1/min : 600 Speed 1st pressure hPa : 10.20...10.40 C-rod trav.mm : 570 2nd pressure hPa C-rod trav.mm : 12.40...12.50 : 310 3rd pressure hPa C-rod trav.mm : 10.60...10.90 SWITCH-OVER POINT Speed 1/min : 200 (220) FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) ROTATIONAL-SPEED LIMITATION 1st version

1mm control-rod travel less than

full-load trav.mm: 12.10 Speed 1/min: 1040...1050

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 260.0...300.0 1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min : 250 Contr.-rod trav.mm: 6.80...7.00 Del.quantity cm3/: 14.0...20.0 1000H.: (11.0...23.0) Dispersion cm3/: 8.00

1000H.: (12.00)

Remarks:

Note inst. in remarks column Test sheet : FIA 13.8 I2 : 27.03.87 Edition Superceeded Calibrating oil : ISO-4113 : 0 401 846 843 Combination no. Injection pump Pump designation : PE6P120A720RS3069 EP type number : 0 411 826 712 Governor Governor design. : RQV300...1000PA501-4 : 0 421 813 609 Governer no. Customer-spec. information Customer : IVECO-FIAT : 8210.22.373 Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder assembly ~ : 1 688 901 019 Opening : 207...210 pressure, bar Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness : 6.00x1.50x1000 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values START OF DELIVERY Test pressure, bar: 25...27 : 3.50...3.60 Prestroke mm : (3.45...3.65) Contr.-rod trav.mm: 9.00...12.00

BOSCH INJ. PUMP TEST SPECIFICATIONS

```
Cam sequence : 1-5-3-6-2-4
                                                          1st version
                                                          Control-lever
                                                           position degrees: 57...65
SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                                                          Testing:
                                                          1st c-rod trav.mm : 11.50
                                                             Speed 1/min: 1040...1050
                                                          2nd c-rod trav.mm: 4.00
SD mark cyl. no. : 1
                                                                      1/min: 1130...1160
                                                            Speed
BASIC SETTING
                                                                        1/min: 1250
                                                          4th speed
                                                            C-rod trav.mm : 0.00...1.00
                1/mi: 1000
1st speed
                                                          LOWEST RATED SPEED I
Contr.-rod trav.mm: 12.50...12.60
                                                          Control-lever
                                                           position degrees: 8...16
Del.quantity cm3/ : 20.5...20.7
                                                          Testing:
               100H.: (20.2...21.0)
                                                          Speed 1/min: 100
C-rod trav.mm min: 7.60
                                                          Speed 1/min: 300
Dispersion
               cm3/:0.5
                                                          C-rod trav.mm : 6.00...6.20
               100H.: (0.9)
                                                          CONSTANT REGULATION
2nd speed
               1/min: 300.0
                                                          Speed
                                                                        1/min : 320...420
Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/: 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/: 0.8

100H.: (1.2)
                                                           compensator (LDA,ADA,ALDA)
                                                          1st version
                                                          Setting
                                                                        1/min : 500
(B) Setting of injection pump with
                                                          Speed
                                                                        hPa : 700
     externally-mounted governor
                                                          Pressure
                                                          Contr.-rod trav.mm: 12.50...12.60
SLEEVE TRAVELS
1st speed 1/min: 325
Sleeve travel mm: 1.50...1.90
2nd speed 1/min: 450
Sleeve travel mm: 2.90...3.30
3rd speed 1/min: 800
                                                          Measuremer. T
                                                                       1/min : 500
                                                          Speed
                                                          1st pressure hPa : -
                                                            C-rod trav.iam : 9.80...9.90
Sleeve travel mm: 5.70...6.10
4th speed 1/min: 1000
                                                          2nd pressure hPa : 280
                                                          C-rod trav.mm : 11.80...11.90
3rd pressure hPa : 220
  Sleeve travel mm: 8.00...8.20
                                                            C-rod trav.mm
                                                                                : 10.70...11.00
SLEEVE POSITION
Control-lever position
                                                          FUEL-DELIVERY CHARACTERISTICS
              Degree: -1
               17min: 1035
Speed
Cont.-rod travelmm: 15.20...17.80
                                                          1st version
                                                          Charge press. hPa: 700
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                                        1/min : 500
                                                          Speed
                                                          Del.quantity cm3/: 214.0...220.0
1000H.: (211.0...223.0)
1st version
Speed 1/min: 1000
Charge press. hPa: 700
                                                          Charge press. hPa : -
                                                          Speed
                                                                        1/min : 500
Del.quantity cm3/: 205.0...207.0
1000H.: (202.0...210.0)
Dispersion cm3/: 5.00
                                                          Del.quantity cm3/ : 131.0...133.0
                                                                        1000H.: (128.0...136.0)
              1000H.: (9.00)
                                                          ROTATIONAL-SPEED LIMITATION
HIGHEST RATED SPEED
                                                          1st version
A18
```

1mm control-rod travel less than

full-load trav.mm: 11.50 Speed 1/min: 1040...1050

STARTING FUEL DELIVERY

Remarks:

On activation of the starting solenoid, the start position must be reached.

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Test sheet
                    : FIA 13,8 H1
Edition
                    : 13.05.87
Superceeded
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 401 846 844
Combination no.
                                                      BASIC SETTING
Injection pump
                                                                     1/mi: 1000
                                                      1st speed
Pump designation
                   : PE6P120A720RS3069
EP type number
                   : 0 411 826 712
                                                      Contr.-rod trav.mm: 12.50...12.60
Governor
                                                      Del.quantity cm3/ : 20.5...20.7
Governor design. : RQ300/1000PA502-1
Governer no.
                    : 0 421 801 388
                                                                    100H.: (20.2...21.0)
Customer-spec. information
                   : IVECO-FIAT
Customer
                                                      Dispersion
                                                                    cm3/:0.5
Engine
                    : 8210.22.371
                                                                    100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                                    1/min: 300.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.0...6.2
                                                      Del.quantity cm3/: 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/: 0.8
100H.: (1.2)
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
                                                      Control-lever position
Inlet press., bar : 1.50
                                                                   Degree: 45
Calibrating nozzle-holder
                                                      Speed
                                                                    17min: 600
                : 1 688 901 019
                                                      Cont.-rod travelmm: 19.20...20.80
 assembly
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar
                    : 207...210
                                                      1st version
Perforated-plate
                                                                    1/min: 1000
                                                      Speed
 diameter mm
                    : 0,8
                                                      Charge press. hPa : 700
                                                      Del.quantity cm3/: 205.0...207.0
1000H.: (202.0...210.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                   : 1 680 750 067
Test inj. tubing
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
                   : 6.00x1.50x1000
x Length mm
                                                      Setting point:
                                                                  1/min : 600
(A) Injection pump setting values
                                                      Speed
    Insp. values in parentheses
Set constant delivery quant.
                                                      Contr.-rod trav.mm: 20.0
    per values
                                                      Testing:
                                                      1st c-rod trav.mm : 11.40
                                                        Speed
                                                                 1/min : 1045...1060
START OF DELIVERY
                                                      2nd c-rod trav.mm : 4.00
Test pressure, bar: 25...27
                                                                   1/min: 1135...1165
                                                        Speed
                    : 3.50...3.60
                                                      4th speed
                                                                   1/min : 1250
Prestroke mm
                    : (3.45...3.65)
                                                        C-rod trav.mm : 0.00...1.00
Contr, -rod trav.mm: 9.00...12.00
A20
```

```
LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed 1/min: 300
Contra-rod trav.mm: 6.1
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 7.60
            1/min : 300
Speed
                : 6.00...6.20
C-rod trav.mm
           mm : 2.00
1/min : 360...400
C-rod trav.mm
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1000
  C-rod trav.mm : 13.00...13.10
2nd speed 1/min: 600
  C-rod trav.mm : 13.00...13.20
 compensator (LDA_ADA_ALDA)
1st version
Setting
Speed
            1/min : 500
Pressure
            hPa : 700
Contr.-rod trav.mm: 12.50...12.60
Measurement
Speed
            1/min : 500
1st pressure hPa : -
                  : 9.80...9.90
 C-rod trav.mm
2nd pressure hPa : 280
3rd pressure hPa : 220
  C-rod trav.mm
                  : 10.70...11.00
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 700
            1/min : 500
Speed
Del.quantity cm3/: 214.0...220.0
            1000H.: (211.0...223.0)
Charge press. hPa : -
            1/min : 500
Speed
Del.quantity cm3/: 131.0...133.0
1000H.: (128.0...136.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.40
Speed
         1/min : 1045...1060
```

STARTING FUEL DELIVERY

1/min : 100 Speed Del.quantity cm3/: 175.0...195.0 1000H.: (171.0...199.0)

Remarks:

On activation of the starting solenoid, the start position must be reached.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 2.60...2.70
                                                      Prestroke mm
Note inst. in remarks column
                                                                          : (2.55...2.75)
                                                      Contr.-rod trav.mm: 9.00...12.00
                    : VOL 12.0K10
: 26.06.87
Test sheet
                                                      Cam sequence
                                                                          : 1-5- 3- 6- 2-
Edition
Superceeded
                   : ISO-4113
Calibrating oil
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Combination no.
                    : 0 401 846 852
Injection pump
                                                      SD mark cyl. no. : 1
Pump designation
                   : PE6P12OA32ORS3118
EP type number
                    : 0 411 826 726
                                                      BASIC SETTING
Governor
Governor design.
                    : RQV250...1025PA657-
                                                                     1/mi: 700
                                                      1st speed
                      18
                    : 0 421 813 648
Governer no.
                                                      Contr.-rod trav.mm: 13.20...13.30
Customer-spec. information
                                                      Del.quantity cm3/ : 23.4...23.6
Customer
                                                                    100H.: (23.1...23.9)
Engine
                    : TD122FAQ
                                                      Dispersion
                                                                    cm3/:0.5
1st version kW : 287.0
              1/min: 2050
Speed
                                                                    100H.: (0.9)
                                                      2nd speed 1/min: 250.0 Contr.-rod trav. m: 3.3...3.5
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                      Del.quantity cm3/: 1.8...2.3
100H.: (1.5...2.5)
                    : 38...42
                                                                    cm3/:0.5
                                                      Dispersion
Overflow valve
                                                                    100H.: (0.7)
                    : 1 417 413 025
                                                      (B) Setting of injection pump with externally-mounted governor
Inlet press., bar: 1.50
                                                      SLEEVE TRAVELS
Calibrating nozzle-holder
 assembly
                   : 1 688 901 019
                                                      1st speed 1/min: 250
                                                        Sleeve travel mm: 1.00...1.40
Opening
                                                      2nd speed
                                                                   1/min: 350
                                                        Steeve travel mm: 2.20...2.80 d speed 1/min: 700
pressure, bar
                    : 207...210
                                                      3rd speed
                                                        Sleeve travel mm: 6.40...6.60
Per for a ted-plate
                                                        h speed 1/min: 1085
Sleeve travel mm: 8.40...8.60
 diameter mm
                    : 0,8
                                                      4th speed
                                                      5th speed 1/min: 1160
                   : 1 680 750 067
                                                        Sleeve travel mm: 9.60...10.00
Test in i. tubing
Outside diameter
                                                      SLEEVE POSITION
x Wall thickness
                                                      Control-lever position
x Length mm
                   : 6,00x1.50x1000
                                                                   Degree: -1
                                                      Speed 1/min: 1085
Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
START OF DELIVERY
                                                      Speed
                                                                    1/min: 700
                                                      Charge press. hPa : 900
Test pressure, bar: 25...27
```

```
Del.quantity cm3/: 234.5...236.5
            1000H: (231.5...239.5)
cm3/: 5.00
1000H: (9.00)
Dispersion
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 116...124
Testing:
1st c-rod trav.mm : 12.20
  Speed 1/min: 1080...1090
2nd c-rod trav.mm : 4.00
           1/min : 1145...1175
  Speed
4th speed 1/min: 1300
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
position degrees: 59...67
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 4.80
Speed 1/min : 250
C-rod trav.mm
                : 3.30...3.50
CONSTANT REGULATION
Speed
            1/min : 250...350
compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
           hPa : 900
Pressure
Contr.-rod trav.mm: 13.20...13.30
Measurement
            1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm : 9.20...9.40
2nd pressure hPa : 80
 C-rod trav.mm
                  : 9.60...9.70
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
           1/min : 700
Speed
Del.quantity cm3/: 154.0...156.0
            1000H.: (151.0...159.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load tray.mm: 12.20
```

Speed 1/min : 1080...1090

STARTING FUEL DELIVERY

LOW IDLE

Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm

: 2.60...2.70 BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : (2.55...2.75) Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column Cam sequence : 1-5-3-6-2-4 : VOL 12.0K11 : 26.06.87 Test sheet Edition Superceeded SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 853 SD mark cyl. no. : 1 Injection pump Pump designation : PE6P12OA32ORS3118 BASIC SETTING EP type number : 0 411 826 726 1/mi: 700 Governor 1st speed Governor design. : RQV250...900PA657-19 Governer no. : 0 421 813 649 Contr.-rod trav.mm: 13.20...13.30 Del.c _ntity cm3/ : 23.4...23.6 Customer-spec. information Customer : VOLVO 100H.: (23.1...23.9) Engine : TD122FBQ cm3/:0.5Dispersion 1st version kW : 287.0 Speed 1/min: 1800 100H.: (0.9) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 3.3...3.5 Del.quantity cm3/: 1.8...2.3 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C 100H.: (1.5...2.5) cm3/: 0.5 : 38...42 Dispersion Overflow valve 100H.: (0.7) : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar : 1.50 externally-mounted governor Calibrating nozzle-holder SLEEVE TRAVELS : 1 688 901 019 1st speed 1/min: 250 assembly Sleeve travel mm: 1.00...1.40 2nd speed 1/min: 350 Opening : 207...210 Steeve travel mm: 2.20...2.80 d speed 1/min: 700 pressure, bar 3rd speed Sleeve travel mm: 6.40...6.60
4th speed 1/min: 935
Sleeve travel mm: 7.60...7.80 Perforated-plate : 0.8 diameter mm 5th speed 1/min: 1015 Test inj. tubing : 1 680 750 067 Sleeve travel mm: 8.90...9.30 Outside diameter SLEEVE POSITION x Wall thickness Control-lever position : 6.00X1.50X1000 x Length mm Degree: -1 17min: 980 Speed (A) Injection pump setting values Cont.-rod travelmm: 15.20...17.80 Insp. values in parentheses Set constant delivery quara FULL-LOAD DELIV. AT FULL-LOAD STOP per values 1st version START OF DELIVERY 1/min: 700 Speed Test pressure, bar: 25...27 Charge press. hPa : 900

```
Del.quantity cm3/: 234.5...236.5
1000H.: (231.5...239.5)
Dispersion cm3/: 5.00
1000H.: (9.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 113...121
Testing:
1st c-rod trav.mm : 12.20
Speed 1/min : 930...940
2nd c-rod trav.mm : 4.00
           1/min : 1000...1030
  Speed
4th speed 1/min: 1150
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 59...67
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 4.80
Speed 1/min: 250
                 : 3,30,..3,50
C-rod trav.mm
CONSTANT REGULATION
Speed
        1/min : 250...350
 compensator (LDA,ADA,ALDA)
1st version
Setting
             1/min : 500
Speed
            hPa : 900
Pressure
Contr.-rod trav.mm: 13.20...13.30
Measurement
Speed 1/min: 500
1st pressure hPa : -
                   : 9.20...9.40
 C-rod trav.mm
2nd pressure hPa : 80
                   : 9.60...9.70
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
            1/min : 700
Speed
Del.quantity cm3/: 154.0...156.0
            1000H.: (151.0...159.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 12.20
```

À25

1/min: 930...940 Speed STARTING FUEL DELIVERY 1/min: 100 Speed Del.quantity cm3/: 240.0...280.0 1000H.: (236.0...284.0) Contr.-rod trav.mm: 20.00...21.00 LOW IDLE Speed 1/min : 250 Contr.-rod trav.mm: 3.30...3.50 Del.quantity cm3/: 18.0...23.0 1000H.: (15.5...25.5) Dispersion cm3/: 5.00 1000H.: (7.00) Remarks: 2.40...2.60 mm.

Delivery-valve spring pre-tension = Permissible alteration from 2.20...2.90

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      START OF DELIVERY
                                                      Test pressure, bar: 25...27
Note inst. in remarks column
                                                                          : 4.00...4.10
: (3.95...4.15)
                                                      Prestroke mm
Test sheet
                   : MB 11,0 E 9
                   : 18.09.87
Edition
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 6- 3- 5- 2- 4- 1
Superceeded
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 846 858
                                                      SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - 0.50 (0.75)
Injection pump
Pump designation : PE6P120A320L83810-10
EP type number : 0 411 826 734
                                                      SD mark cyl. no. : 6
Governor
Governor design. : RQ300/1150PA511-4
                                                      BASIC SETTING
Governer no. : 0 421 801 341
                                                      1st speed
                                                                     1/mi: 1150
Customer-spec. information
Customer
                                                      Contr.-rod trav.mm: 10.40...10.50
                   : DAIMLER-BENZ
Engine
                    : 0M421A
                                                      Del.quantity cm3/ : 15.8...16.0
1st version kW : 184.0
                                                                     100H.: (15.5...16.3)
              1/min: 2300
Speed
                                                      Dispersion
                                                                    cm3/:0.5
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.9)
Calibrating-oil inlet temp. OC
                    : 38...42
                                                                    1/min: 300.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/: 1.4...2.0
Overflow valve
                                                                    100H.: (1.1...2.3) cm3/: 0.8
                    : 1 417 413 025
                                                      Dispersion
                                                                    100H.: (1.2)
Inlet press., bar: 1.50
Overflow
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
 quantity min. 1/h: 100...120
Calibrating nozzle-holder
                                                      SLEEVE TRAVELS
           : 1 688 901 019
 assembly
                                                      1st speed 1/min: 300
                                                      Sleeve travel mm: 2.60...2.80
2nd speed 1/min: 500
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 1200
Sleeve travel mm: 6.20...6.50
Opening
pressure, bar
                   : 207...210
Perforated-plate
diameter mm
                                                      4th speed 1/min: 1275
                    : 0,8
                                                        Sleeve travel mm: 8.50...9.00
Test inj. tubing : 1 680 750 067
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                                   Degree: 108
1/min: 600
Outside diameter
x Wall thickness
                                                      Speed
                  : 6.00x1.50x1000
                                                      Cont.-rod travelmm: 19.10...20.80
x Length mm
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      1st version
    per values
                                                                    1/min: 1150
                                                      Speed
                                                      Charge press. hPa: 700
```

Del.quantity cm3/: 158.0...160.0 1000H.: (155.0...163.0) cm3/: 5.00 Dispersion 1000H.: (9.00) HIGHEST RATED SPEED Setting point: Speed 1/min : 600 Contr.-rod trav.mm: 19.9 Testing: 1st c-rod trav.mm : 9.40 1/min: 1195...1210 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1250...1280 th speed 1/min: 1360 G-rod trav.mm: 0.00...1.50 4th speed LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min : 300 Contr.-rod trav.mm: 5.0 Testing: 1/min : 200 Speed C-rod trav.mm min : 6.70 Speed 1/min : 300 : 4.90...5.10 C-rod trav.mm : 2.00 C-rod trav.mm 1/min: 360...390 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa Contr.-rod trav.mm: 10.00...10.20 Measurement 1/min : 500 Speed 1st pressure hPa : 340 : 10.20...10.30 C-rod trav.mm SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS 1st version Change press. hPa : 700 Speed 1/min : 600 Del.quantity cm3/: 157.0...163.0 1000H.: (154.0...166.0)

Dispersion cm3/: 8.00 1000H.: (12.0) Charge press. hPa: -Speed 1/min: 500 Del.quantity cm3/: 139.0...142.0 1000H.: (136.0...145.0) Dispersion cm3/: 8.00 1000H.: (12.0)

ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 9.40 Speed 1/min: 1195...1210

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

Remarks: APPLICATION Omnibus

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : ENA 11,9 B
                    : 18.09.87
Edition
Superceeded
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 401 846 861
Combination no.
                                                      BASIC SETTING
Injection pump
                                                      1st speed
                                                                     1/mi: 1030
Pump designation
                   : PE6P120A320RS3176-1
EP type number
                   : 0 411 826 767
                                                      Contr.-rod trav.mm: 13.40...13.50
Governor
Governor design. : RQV250...1050PA808
                                                      Del.quantity cm3/: 28.2...28.4
Governer no.
                    : 0 421 813 553
                                                                    100H.: (27.9...28.7)
Customer-spec. information
Customer
                    : ENASA
                                                      Dispersion
                                                                    cm3/:0.5
                    : 96 R1 AX
                                                                    100H.: (0.9)
Engine
TEST BENCH REQUIREMENTS
                                                                    1/min: 250.0
                                                      2nd speed
                                                      Contri-rod trav. m: ?
Calibrating-oil inlet temp. °C
                                                      Del.quantity cm3/: 1.7...2.3
                                                                    100H.: (1.4...2.6)
                    : 38...42
                                                                    cm3/: 0.8
100H.: (1.2)
                                                      Dispersion
Overflow valve
                    : 1 417 413 025
                                                      (B) Setting of injection pump with
Iniet press., bar : 1.50
                                                          externally-mounted governor
                                                      SLEEVE TRAVELS
Calibrating nozzle-holder
                                                     1st speed 1/min: 250
Sleeve travel mm: 1.00...1.40
2nd speed 1/min: 350
                : 1 688 901 019
 assembly
Opening
                                                        Sleeve travel mm: 1.70...2.30
                   : 207...210
 pressure, bar
                                                                   1/min: 700
                                                      3rd speed
Perforated-plate
                                                        Sleeve travel mm: 4.50...5.10
                                                                   1/min: 1095
 diameter mm
                    : 0,8
                                                      4th speed
                                                        Sleeve travel mm: 8.20...8.40
                                                        th speed 1/min: 1195
Sleeve travel mm: 9.40...9.80
                                                      5th speed
Test inj. tubing
                   : 1 680 750 067
                                                      SLEEVE POSITION
Outside diameter
                                                     Control-lever position
x Wall thickness
x Length mm
                   : 6.00x1.50x1000
                                                                   Degree: -1
                                                                    17min: 1110
                                                      Speed
                                                     Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                     1st version
START OF DELIVERY
                                                     Speed
                                                                    1/min: 1030
Test pressure, bar: 25...27
                                                     Charge press. hPa : 900
                                                     Del.quantity cm3/: 282.0...284.0
1000H.: (279.0...287.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                    : 3.80...3.90
Prestroke mm
                    : (3.75...3.95)
Contr.-rod trav.mm: 9.00...12.00
A28
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 44...52
Testing:
1st c-rod trav.mm : 12.40
             1/min : 1090...1100
  Speed
2nd c-rod trav.mm : 4.00
             1/min : 1180...1210
1/min : 1300
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: ?
CONSTANT REGULATION
Speed
             1/min : 250...350
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
             hPa : 900
Pressure
Contr.-rod trav.mm: 13.40...13.50
Measurement
             1/min : 500
Speed
1st pressure hPa : -
                    : 9.80...10.20
  C-rod trav.mm
                   : 550
2nd pressure hPa
                   : 12.60...12.70
 C-rod trav.mm
3rd pressure hPa : 280
  C-rod trav.mm
                    : 10.90...11.10
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
             1/min : 650
Del.quantity cm3/: 239.0...245.0
1000H.: (236.0...248.0)
Charge press. hPa : -
Speed 1/min: 500
Del.quantity cm3/: 151.0...153.0
1000H.: (148.0...156.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 12.40
           1/min : 1090...1100
Speed
B01
```

```
STARTING FUEL DELIVERY
```

Speed 1/min: 100 Del.quantity cm3/: 250.0...280.0 1000H.: (246.0...274.0)

LOW IDLE

Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm
APPLICATION
Special-purpose vehicle

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
                    : ENA 11.9 D
: 24.07.87
Test sheet
                                                      SD mark cyl. no. : 1
Edition
Superceeded
                                                      BASIC SETTING
Calibrating oil
                   : ISO-4113
                                                      1st speed
                                                                     1/mi: 1030
Combination no.
                    : 0 401 846 862
                                                      Contr.-rod trav.mm: 12.00...12.10
Injection pump
Pump designation : PE6P110A320RS3201
                                                      Del.quantity cm3/: 12.5...12.7
                   : 0 411 816 753
EP type number
                                                                    100H.: (12.2...13.0)
Governor
Governor design. : RQ250/1050PA218-1
                    : 0 421 801 406
                                                      Dispersion
                                                                    cm3/:0.5
Governer no.
Customer-spec. information
                                                                    100H.: (0.9)
Customer
                   : ENASA
                                                      2nd speed 1/min: 250.0
Del.quantity cm3/: 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/: 0.8
Engine
                    : 96 A4 AZ
TEST BENCH REQUIREMENTS
                                                                    100H.: (1.2)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                                   Degree: -2
1/min: 600
Overflow valve
                    : 1 417 413 025
                                                      Speed
                                                      Cont.-rod travelmm: 15.70...16.30
Inlet press., bar : 1.50
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                      1st version
                                                                    1/min: 1030
                                                      Speed
                                                      Del.quantity cm3/: 125.0...127.0
1000H.: (122.0...130.0)
Dispersion cm3/: 5.00
Opening
 pressure, bar : 172...175
                                                                   1000H.: (9.00)
Test in i. tubing
                   : 1 680 750 015
                                                      HIGHEST RATED SPEED
Outside diameter
                                                      1st version
x Wall thickness
                                                      Control-lever
                    : 6.00x1.50x600
                                                       position degrees: 600 16.011.0
x Length mm
(A) Injection pump setting values
                                                      Setting point:
    Insp. values in parentheses
                                                      Speed
                                                                  1/min : 0 109
    Set constant delivery quant.
                                                      Contr.-rod trav.mm: 5...
    per values ____
                                                      Testing:
                                                      1st c-rod trav.mm : 1110
Speed 1/min : 4.00 1130...
START OF DELIVERY
Test pressure, bar: 25...27
                                                      2nd c-rod trav.mm : 1160
                    : 3.20...3.30
                                                                                           n
                                                        Speed
                                                                  1/min : 1250
Prestroke mm
                                                                 1/min : .00...1.00
                    : (3.15...3.25)
                                                      4th speed
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2-
                                                      LOWEST RATED SPEED I
                                                      Setting point W/out aux. spring
                                                                 1/min : 250
                                                      Speed
B02
```

```
Contr.-rod trav.mm: ?
Testing:
Speed 1/min: 100 C-rod trav.mm min: ?
Speed 1/min: 250
C-rod trav.mm
CONSTANT REGULATION
           1/min : 250...330
Speed
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.00
Speed
           1/min : 1095...1110
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 143.0...163.0
1000H.: (139.0...167.0)
LOW IDLE
Remarks:
APPLICATION
Special-purpose vehicle
```

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                     SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
Test sheet
                    : STE 10,0 E
                    : 28.08.87
Edition
Superceeded
                   : ISO-4113
Calibrating oil
                                                     SD mark cyl. no. : 1
Combination no.
                    : 0 401 846 863
                                                     BASIC SETTING
                                                                    1/mi: 1100
Injection pump
                                                     1st speed
Pump designation : PE6P110A72OR$3204
                    : 0 411 816 754
EP type number
                                                     Contr.-rod trav.mm: 12.60...12.70
Governor
Governor design. : RQV250...1100PA413-2
                                                     Del.quantity cm3/: 16.2...16.4
Governer no. : 0 421 813 667
                                                                   100H.: (15.9...16.7)
Customer-spec. information
                                                                   cm3/:0.4
                    : STEYR
                                                     Dispersion
Customer
                    : WD615.63
                                                                   100H.: (0.7)
Engine
1st version kW : 204.0
                                                                   1/min: 250.0
                                                     2nd speed -
                                                     Contr.-rod trav. m: 3.9...4.1
              1/min: 2200
Speed
                                                     Del.quantity cm3/: 1.6...2.1
TEST BENCH REQUIREMENTS
                                                                   100H.: (1.4...2.4)
                                                                   cm3/: 0.4
100H.: (0.7)
                                                     Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                     (B) Setting of injection pump with
Overflow valve
                                                          externally-mounted governor
                    : 1 417 413 025
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 250
Inlet press., bar : 1.50
                                                     Sleeve travel mm: 1.00...1.40
2nd speed 1/min: 350
Sleeve travel mm: 1.70...2.30
3rd speed 1/min: 700
Calibrating nozzle-holder
                 : 0 681 343 909
 assembly
                                                       Sleeve travel mm: 4.40...5.00
Opening
 pressure, bar : 172...175
                                                                  1/min: 1145
                                                     4th speed
                                                       Sleeve travel mm: 8.40...8.60
                                                     5th speed 1/min: 1235
                                                       Sleeve travel mm: 9.40...9.80
Test inj. tubing : 1 680 750 015
                                                     SLEEVE POSITION
Outside diameter
x Wall thickness
                                                     Control-lever position
                    : 6.00x1.50x600
                                                                  Degree: -1
x Length mm
                                                                   17min: 1140
                                                     Speed
(A) Injection pump setting values
                                                     Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
    Set constant delivery quant.
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                     1st version
                                                     Speed
START OF DELIVERY
                                                                   1/min: 1100
                                                     Charge press. hPa : 900
Test pressure, bar: 25...27
                                                     Del.quantity cm3/: 162.0...164.0
1000H.: (159.0...167.0)
Prestroke mm
                    : 2.80...2.90
                    : (2.75...2.95)
                                                     Dispersion cm3/ : 4,00
Contr.-rod trav.mm: 9.00...12.00
                                                                  1000H.: (7.50)
B04
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 44...52
Testing:
1st c-rod trav.mm : 11.60
  Speed 1/min: 1140...1150
2nd c-rod trav.mm : 4.00
          1/min : 1220...1250
1/min : 1350
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...14
Testing:
Speed
            1/min : 100
C-rod trav.mm min: 5.50
Speed 1/min: 250
C-rod trav.mm : 3.90...4.10
CONSTANT REGULATION
            1/min : 250...330
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 900
Pressure
Contr.-rod trav.mm: 12.60...12.70
Measurement
Speed
            1/min : 500
1st pressure hPa : -
                   : 9.60...9.80
  C-rod trav.mm
                   : 560
2nd pressure hPa
 C-rod trav.mm : 11.90...12.00
3rd pressure hPa : 320
  C-rod trav.mm
                  : 10.30...10.50
SWITCH-OVER POINT
            1/min : 170 (190)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
Speed 1/min : 700
Del.quantity cm3/: 178.0...182.0
            1000H.: (175.0...185.0)
Charge press. hPa : -
Speed
            1/min : 500
B05
```

```
Del.quantity cm3/: 125.0...128.0
1000H.: (122.5...130.5)
```

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.60 Speed 1/min: 1140...1150

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 115.0...145.0 1000H.: (111.0...149.0)

Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm

```
: 4.00...4.10
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Prestroke mm
                                                                        : (3.95...4.15)
                                                     Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                     Cam sequence : 6- 3- 5- 2- 4- 1
                   : MB 11.0 S 7 : 14.08.87
Test sheet
Edition
Superceeded
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
                   : 0 401 846 870
Combination no.
                                                     SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3835-1
                                                     BASIC SETTING
EP type number
                 : 0 411 816 755
                                                                    1/mi: 1050
Governor
                                                     1st speed
Governor design. : RQ300/1050PA827-4K
Governer no.
                                                     Contr.-rod trav.mm: 13.30...13.40
                   : 0 421 803 096
                                                     Del.quantity cm3/: 13.9...14.1
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                                   100H.: (13.6...14.3)
                   : 0M441
Engine
                                                                  cm3/:0.4
                                                     Dispersion
1st version kW : 160.0
Speed
              1/min: 2100
                                                                   100H.: (0.8)
                                                     2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.8...9.0
TEST BENCH REQUIREMENTS
                                                     Del.quantity cm3/: 1.5...2.1
100H.: (1.2...2.3)
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                   cm3/:0.4
                                                     Dispersion
Overflow valve
                                                                   100H.: (0.7)
                    : 1 417 413 025
                                                     (B) Setting of injection pump with
Inlet press., bar: 1.50
                                                         externally-mounted governor
                                                     SLEEVE TRAVELS
Over flow
 quantity min. 1/h: 100...120
                                                     1st speed 1/min: 300
                                                       Sleeve travel mm: 1.30...1.50
                                                    2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70
3rd speed 1/min: 900
Calibrating nozzle-holder
             : 0 681 343 009
 assembly
                                                       Sleeve travel mm: 6.90...7.20
Opening
 pressure, bar : 172...175
                                                     4th speed 1/min: 1050
                                                       Sleeve travel mm: 7.60...7.90
                                                     5th speed 1/min: 1100
Test inj. tubing : 1 680 750 015
                                                       Sleeve travel mm: 10.10...10.60
Outside diameter
                                                     SLEEVE POSITION
                                                     Control-lever position
x Wall thickness
x Length mm
                  : 6.00x1.50x600
                                                                 Degree: -2
                                                                  1/min: 600
                                                     Speed
                                                    Cont.-rod travelmm: 14.70...15.70
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                     1st version
START OF DELIVERY
                                                    Speed
                                                                  1/min: 1050
                                                    Del.quantity cm3/: 139.0...141.0
Test pressure, bar: 25...27
                                                                 1000H.: (136.5...143.5)
B06
```

Dispersion cm3/ : 4.00 1000H.: (8.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 32...40 Setting point: Speed 1/min : 600 Contr.-rod trav.mm: 15.2 Testing: 1st c-rod trav.mm : 12.30 Speed 1/min : 1095...1110 2nd c-rod trav.mm : 4.00 Speed 1/min: 1150...1180 4th speed 1/min: 1300 C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Setting point w/out aux. spring 1/min : 300 Speed Contr.-rod trav.mm: 8.8 Testing: 1/min : 200 Speed C-rod trav.mm min : 10.50 1/min : 300 Speed : 8.80...8.90 C-rod trav.mm : 2.00 C-rod trav.mm Speed 1/min: 450...490 1/min : 550 Speed C-rod trav.mm max: 1.80 TORQUE CONTROL Dimension a mm : 2.00 Torque-control curve - 1st version 1/min : 1050 1st speed C-rod trav.mm : 13.30...13.40 2nd speed 1/min : 600 C-rod trav.mm : 13.20...13.40 3rd speed 1/min: 900 C-rod trav.mm : 13.40...13.60 FUEL-DELIVERY CHARACTERISTICS 1/min : 600 Speed Del.quantity cm3/: 124.0...127.0 1000H.: (121.0...130.0) cm3/: 6.00 1000H.: (9.00) 1/min: 900 Dispersion Speed Del.quantity cm3/: 130.0...134.0 1000H.: (127.0...137.0) cm3/:6.00Dispersion 1000H.: 9.00 ROTATIONAL-SPEED LIMITATION

B07

1st version 1mm control-rod travel less than

full-load trav.mm: 12.30 Speed 1/min: 1095...1110

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/: 130.0...150.0 1000H.: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : MB 11,0 S 8 : 28.08.87 Calibrating oil : ISO-4113 Combination no. : 0 401 846 871 Injection pump Pump designation : PE6P110A320LS3835-1 EP type number : 0 411 816 755 Governor Governor design. : RQV300..1050PA829-4K Governer no. : 0 421 815 186 Customer-spec. information Customer : DAIMLER-BENZ Engine : 0M441 1st version kW : 160.0 Speed 1/min: 2100 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Overflow quantity min. 1/h: 100...120 Calibrating nozzle-holder assembly : 0 681 343 009 Opening | pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.004.10 (3.954.15)	Dispersion cm3/ : 4.00 1000H.: (8.00)
Contrrod trav.mm: 9.0012.00	HIGHEST RATED SPEED 1st version
	Control-lever position degrees: 5866
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)	Testing: 1st c-rod trav.mm : 12.30
SD mark cyl. no. : 6	Speed 1/min: 10951110 2nd c-rod trav.mm: 4.00
BASIC SETTING	Speed 1/min: 11501180 4th speed 1/min: 1300
1st speed 1/mi: 1050	C-rod trav.mm : 0.001.00
Contrrod trav.mm: 13.3013.40	LOWEST RATED SPEED I Control-lever
Del.quantity cm3/: 13.914.1	position degrees: 1018
100H.: (13.614.3)	Testing: Speed 1/min : 200_
Dispersion cm3/: 0.4	G-rod trav.mm min : 10.30 Speed 1/min : 300
100H.: (0.8)	C-rod trav.mm : 8.809.00
2nd speed 1/min: 300.0	CONSTANT REGULATION Speed 1/min: 300550
Del.quantity cm3/: 1.52.1 100H.: (1.22.3) Dispension cm3/: 0.4_	TORQUE CONTROL
100H.: (0.7)	Torque-control curve - 1st version 1st speed 1/min : 1050
(B) Setting of injection pump with externally-mounted governor	C-rod trav.mm : 13.3013.40 2nd speed
SLEEVE TRAVELS	3rd speed
1st speed 1/min: 300 Sleeve travel mm: 1.101.30	SWITCH-OVER POINT
2nd speed 1/min: 500 Steeve travel mm: 3.704.00	Speed 1/min : 220 (240)
3rd speed 1/min: 800	FUEL-DELIVERY CHARACTERISTICS
4th speed 1/min: 1090 Sleeve travel mm: 8.108.50	Speed 1/min : 600 Del.quantity cm3/ : 124.0127.0
Sth speed 1/min: 1170 Sleeve travel mm: 9.5010.00	1000H.: (121.0130.0) Dispersion cm3/: 6.00
SLEEVE POSITION	1000H.: (9.00) Speed 1/min: 900
Control-lever position	Del.quantity cm3/: 130.0134.0 1000H.: (127.0137.0)
Speed 1/min: 1050 Controd travelmm: 15.2017.80	Dispersion cm3/: 6.00 1000H.: (9.00)
FULL-LOAD DELIV. AT FULL-LOAD STOP	ROTATIONAL-SPEED LIMITATION
1st version	1st version
Speed 1/min: 1050 Del.quantity cm3/: 139.0141.0 1000H.: (136.5143.5)	1mm control-rod travel less than full-load trav.mm: 12.30
809	

Speed 1/min : 1095...1110

STARTING FUEL DELIVERY

Remarks:

APPLICATION Omnibus

```
: 8- 7- 2- 6- 3- 5-
4- 1
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence
Note inst. in remarks column
Test sheet
                   : MAN
                                                       SD ang. spacing CS: 0-45-90-135-180-225-
                   : 24.07.87
Edition
Superceeded
                   : 10.85
                                                                             270-315
Calibrating oil : ISO-4113
                                                       Tolerance + - 0
                                                                           : 0.50 (0.75)
Combination no. : 0 401 848 083
                                                       SD mark cyl. no. : 8
Injection pump
                                                       BASIC SETTING
Pump designation : PE8P110A520/5L8851
                  : 0 411 818 046
                                                                      1/mi: 1150
EP type number
                                                       1st speed
Governor
Governor design. : RQV250...1150PA670-3
                                                       Contr.-rod trav.mm: 10.80...10.90
                   : 0 421 813 500
Governer no.
                                                       Del.quantity cm3/: 14.3...14.5
Customer-spec. information
                                                                     100H.: (14.0...14.7)
Customer
                    : MAN
                                                                     cm3/:0.4
Engine
                    : D2848T
                                                       Dispersion
1st version kW : 245.0
                                                                     100H.: (0.7)
              1/min: 2300
Speed
                                                      2nd speed 1/min: 250.0
Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/: 1.8...2.4
100H.: (1.5...2.6)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                                     cm3/:0.4
                    : 38...42
                                                       Dispersion
                                                                     100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
Inlet press., bar: 1.50
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 250
Calibrating nozzle-holder
                                                         Sleeve travel mm: 1.10...1.30
                 : 0 681 343 009
 assembly
                                                       2nd speed 1/min: 450
                                                         Sleeve travel mm: 2.90...3.30
Opening
                                                      3rd speed 1/min: 900
Sleeve travel mm: 5.70...6.10
4th speed 1/min: 1150
Sleeve travel mm: 7.60...8.00
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
                                                       SLEEVE POSITION
Outside diameter
x Wall thickness
                                                       Control-lever position
                   : 6.00x1.50x600
x Length mm
                                                                    Degree: -1
                                                                     17min: 1220
                                                       Speed
                                                       Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                       1st version
START OF DELIVERY
                                                       Speed
                                                                     1/min: 1150
Test pressure, bar: 25...27
                                                       Charge press. hPa : 1000
                                                      Del.quantity cm3/: 143.0...145.0
1000H.: (140.5...147.5)
Dispersion cm3/: 4.00
Prestroke mm
                    : 3.00...3.10
                    : (2.95...3.15)
                                                                    1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
811
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 58...66 . `sting: 1st c-rod trav.mm: 9.80 Speed 1/min : 1190...1200 2nd c-rod trav.mm : 4.00 1/min : 1280...1310 1/min : 1450 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 5...13 Testing: 1/min: 100 Speed C-rod trav.mm min : 6.50 Speed 1/min: 250 C-rod trav.mm : 4.90...5.10 CONSTANT REGULATION 1/min : 280...390 Speed compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 500 Pressure hPa : 1000 Contr.-rod trav.mm: 10.80...10.90 Measurement 1/min : 500 Speed 1st pressure hPa : 9.60...9.80 C-rod trav.mm 2nd pressure hPa : 290 : 10.50...10.60 C-rod trav.mm : 230 3rd pressure hPa : 9.90...10.20 C-rod trav.mm SWITCH-OVER POINT 1/min : 200 (220) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 1000 Speed 1/min : 700 Del.quantity cm3/: 135.0...141.0 1000H.: (132.0...144.0) Charge press. hPa : -

1/min : 500

Speed

812

Del.quantity cm3/: 108.0...110.0 1000H.: (105.5...112.5) Dispersion cm3/: -1000H.: (7.50) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 9.80 1/min : 1190...1200 Speed STARTING FUEL DELIVERY Speed 1/min : 100 Del.quantity cm3/: 190.0...210.0 1000H.: (186.0...214.0) LOW IDLE 1/min : 250 Speed Contr.-rod trav.mm: 4.90...5.10 Del.quantity cm3/: 18.0...24.0 1000H.: (15.5...26.5) cm3/: 4.50 Dispersion 1000H.: (7.50) Remarks: : MAN-NR. 2-7354

Note inst. in remarks column

Test sheet : MB 14,6 A 1
Edition : 18.09.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 401 848 755

Injection pump

Pump designation : PE8P110A320LS3802-10 EP type number : 0 411 818 710

Governor

Governor design. : RQ300/1150PA437-3 Governor no. : 0 421 801 230

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M422 Engine

1st version kW : 184.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness : 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 4.00...4.10 : (3.95...4.15) 1/min : 1255...1285 1/min : 1350 Prestroke mm Speed 4th speed Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 8- 7- 2- 6- 3- 5-C-rod trav.mm : 0.00...1.50 4- 1 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 7.1 SD ang. spacing CS: 0-45-90-135-180-225-270-315 Testing: Tolerance + - 0 : 0.50 (0.75)1/min : 100 Speed C-rod trav.mm min : 8.50

Speed 1/min : 300

C-rod trav.mm : 7.00...7.20

C-rod trav.mm : 2.00 SD mark cyl. no. : 8 .mm : 2.00 1/min : 400...440 BASIC SETTING Speed 1st speed 1/mi: 750 TORQUE CONTROL Torque-control curve - 1st version Contr.-rod trav.mm: 11.30...11.40 1st speed 1/min: 1150 C-rod trav.mm : 11.00...11.10 2nd speed 1/min : 600 Del.quantity cm3/ : 9.9...10.1 100H.: (9.6...10.3) C-rod trav.mm : 11.20...11.40 Dispersion cm3/:0.4FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 1150 Del.quantity cm3/: 112.0...116.0 100H.: (0.7) 1000H.: (109.0...119.0) cm3/: 7.00 1000H.: (10.0) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.5...8.7 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.2) Dispersion cm3/: 0.4 Dispersion SETTING CONTROL-ROD STOP 100H.: (0.7) 1/min : 600 Speed SLEEVE POSITION ROTATIONAL-SPEED LIMITATION Control-lever position Degree: -1 1/min: 650 1st version Speed 1mm control-rod travel less than Cont.-rod travelmm: 13.20...14.00 full-load trav.mm: 10.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1/min : 1195...1210 Speed STARTING FUEL DELIVERY 1st version Speed 1/min: 750
Del.quantity cm3/: 99.0...101.0
1000H.: (96.5...103.5)
Dispersion cm3/: 4.00 Speed 1/min : 100 Del.quantity cm3/: 130.0...150.0 1000H.: (7.00) 1000H.: (126.0...154.0) HIGHEST RATED SPEED Remarks: Setting point: Speed 1/min: 650 Contr.-rod trav.mm: 13.6 Testing:

1st c-rod trav.mm : 10.00

2nd c-rod trav.mm: 4.00

Speed 1/min: 1195...1210

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                     : 4.00...4.10
                                                   Prestroke mm
                                                                     : (3.95...4.15)
Note inst. in remarks column
                                                   Contr.-rod trav.mm: 9.00...12.00
                                                   Cam sequence : 8- 7- 2- 6- 3- 5-
Test sheet
Edition
Superceeded
                  : MB 14,7 C
: 10.08.87
                                                                        4- 1
                  : 23.9.86
Calibrating oil
                  : ISO-4113
                                                   SD ang. spacing CS: 0-45-90-135-180-225-
Combination no.
                  : 0 401 848 781
                                                                       270-315
                                                   Tolerance + - 0: 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320LS3842
                                                   SD mark cyl. no. : 8
EP type number
                  : 0 411 818 714
                                                   BASIC SETTING
Governor
Governor design. : RQ300/950PA827K
Governer no. : 0 421 803 092
                                                               1/mi: 950
                                                   1st speed
Customer-spec. information
                                                   Centr.-rod trav.mm: 13.50...13.60
Customer
                  : DAIMLER-BENZ
                                                   Del.quantity cm3/ : 13.3...13.5
Engine
                   : 0M442
                                                                100H.: (13.0...13.7)
1st version kW : 206.0
            1/min: 1900
                                                                cm3/:0.4
Speed
                                                   Dispersion
                                                                100H.: (0.8)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                   2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.8...9.0
                   : 38...42
                                                   Del.quantity cm3/: 1.5...2.1
Overflow valve
                                                                100H.: (1.2...2.3)
                                                                cm3/: 0.4
100H.: (0.7)
                   : 1 417 413 025
                                                   Dispersion
Inlet press., bar: 1.50
                                                   (B) Setting of injection pump with
Overflow
                                                       externally-mounted governor
 quantity min. 1/h: 100...120
                                                   SLEEVE TRAVELS
Calibrating nozzle-holder
                                                   1st speed 1/min: 300
 assembly : 0 681 343 009
                                                     Sleeve travel mm: 1.80...2.00
                                                   2nd speed 1/min: 500
                                                   Sleeve travel mm: 5.50...5.70
3rd speed 1/min: 775
Opening
pressure, bar : 172...175
                                                     Sleeve travel mm: 6.40...6.70
                                                   4th speed 1/min: 950
Sleeve travel mm: 7.40...7.80
Test inj. tubing : 1 680 750 015
                                                   5th speed 1/min: 1080
                                                     Sleeve travel mm: 9.50...10.00
Outside diameter
x Wall thickness
                  : 6.00x1.50x600
                                                   SLEEVE POSITION
x Length mm
                                                   Control-lever position
(A) Injection pump setting values
                                                               Degree: 108
                                                                17min: 600
    Insp. values in parentheses
                                                   Speed
    Set constant delivery quant.
                                                   Cont.-rod travelmm: 14.70...15.70
    per values ____
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
Test pressure, bar: 25...27
                                                   1st version
                                                                1/min: 950
                                                   Speed
816
```

```
Del.quantity cm3/: 133.0...135.0
1000H.: (130.5...137.5)
             cm3/ : 4.00
Dispersion
              1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 37...45
Setting point:
Speed
             1/min : 600
Contr.-rod trav.mm: 15.2
Testing:
1st c-rod trav.mm : 12.50
            1/min: 995...1010
  Speed
2nd c-rod trav.mm : 4.00
            1/min: 1055...1085
  Speed
4th speed 1/min: 1300
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Control-lever
 position degrees: 11...19
Setting point w/out aux. spring
Speed
            1/min : 300
Contr.-rod trav.mm: 8.9
Testing:
             1/min : 200
Speed
C-rod trav.mm min : 10.50
            1/min : 300
Speed
C-rod trav.mm
                 : 8.89...9.00
                   : 2.00
C-rod trav.mm
Speed 1/min: 450...490
Speed 1/min: 550
C-rod trav.mm max : 1.80
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 950
1st speed
  C-rod trav.mm : 13.50...13.60
2nd speed 1/min: 600
C-rod trav.mm : 13.00...13.20
3rd speed 1/min : 750
  C-rod trav.mm : 13.10...13.30
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/: 121.0...124.0

1000H.: (118.0...127.0)

Dispersion cm3/: 8.00

1000H.: (11.0)

Speed 1/min: 750
Del.quantity cm3/: 122.0...126.0
             1000H.: (119.0...129.0)
              cm3/: (8.00)
Dispersion
ROTATIONAL-SPEED LIMITATION
B17
```

1st version
1mm control-rod travel less than
full-load trav.mm: 12.50
Speed 1/min: 995...1010
STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : MAN 14,5 B : 02.12.86 Calibrating oil : ISO-4113 Combination no. : 0 401 848 785 Injection pump Pump designation : PE8P12OA520/4L\$3834 EP type number : 0 411 828 718 Governor Governor design. : RQV250...1150PA668-7 Governer no. : 0 421 813 481 Customer-spec. information Customer : MAN : D 2848 LE Engine 1st version kW : 375.0 Speed 1/min: 2300 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder assembly : 1 688 901 019 Opening pressure, bar : 207...210 Perforated-plate : 0,8 diameter mm Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness : 6.00x1.50x1000 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30 : (4.15...4.35) HIGHEST RATED SPEED Contr.-rod trav.mm: 9.00...12.00 1st version : 8- 7- 2- 6- 3- 5-Cam sequence Control-lever position degrees: 117...125 Testina: 1st c-rod trav.mm : 10.80 Speed 1/min : 1190...1200 SD ang. spacing CS: 0-45-90-135-180-225-2nd c-rod trav.mm : 4.00 270-315 Tolerance + - 0 Speed 1/min: 1330...1360 4th speed 1/min: 1450 : 0.50 (0.75) C-rod trav.mm : 0.00...1.00 SD mark cyl. no. : 8 BASIC SETTING LOWEST RATED SPEED I Control-lever 1st speed 1/mi: 1150 position degrees: 64...72 Contr.-rod trav.mm: 11.80...11.90 Testing: Speed 1/min : 100 C-rod trav.mm min: 8.20 Del.quantity cm3/: 20.9...21.1 1/min : 250 Speed C-rod trav.mm : 6.60...6.80 C-rod trav.mm : 2.00 100H.: (20.6...21.4) Speed 1/min: 400...460 Dispersion cm3/:0.5SWITCH-OVER POINT 100H.: (0.9) 1/min: 250.0 1/min : 200 (220) 2nd speed Speed Contr.-rod trav. m: 6.6...6.8 Del.quantity cm3/: 1.7...2.3 ROTATIONAL-SPEED LIMITATION 100H.: (1.4...2.6) cm3/: 0.8 100H.: (1.2) Dispersion 1st version 1mm control-rod travel less than (B) Setting of injection pump with full-load trav.mm: 10.80 externally-mounted governor Speed 1/min : 1190...1200 SLEEVE TRAVELS STARTING FUEL DELIVERY 1st speed 1/min: 250 Sleeve travel mm: 1.00...1.20 2nd speed 1/min: 800 Speed 1/min: 100 Del.quantity cm3/: 190.0...210.0 Sleeve travel mm: 6.30...6.50 3rd speed 1/min: 1150 1000H.: (186.0...214.0) Sleeve travel mm: 8.40...8.60 LOW IDLE SLEEVE POSITION Control-lever position 1/min : 250 Speed Contr.-rod trav.mm: 6.60...6.80

Del.quantity cm3/: 17.0...23.0

1000H.: (14.0...26.0)

Dispersion cm3/: 8.00 Degree: -1 1/min: 1150 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1000H.: (12.00) 1st version Remarks: : MAN-NR. 2-7678

819

```
: 4.00...4.10
: (3.95...4.15)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Prestroke mm
                                                      Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                                          : 8- 7- 2- 6- 3- 5-
                                                      Cam sequence
Test sheet
Edition
Superceeded
                                                                            4- 1
                    : MB 14,7 C 2
                    : 10.08.87
                   : 13.5.87
Calibrating oil : ISO-4113
                                                      SD ang. spacing CS: 0-45-90-135-180-225-
                   : 0 401 848 786
Combination no.
                                                                            270-315
                                                      Tolerance + - 0
                                                                          : 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320L83842
                                                      SD mark cyl. no. : 8
EP type number : 0 411 818 714
                                                      BASIC SETTING
Governor
Governor design. : RQ300/1050PA827-3K
Governer no. : 0 421 803 095
                                                      1st speed
                                                                   1/mi: 1050
Customer-spec. information
                                                      Contr.-rod trav.mm: 12.90...13.90
                   : DAIMLER-BENZ
Customer
                                                      Del.quantity cm3/: 13.2...13.4
                   : 0M442
Engine
                                                                    100H.: (12.9...13.6)
1st version kW : 213.0
Speed 1/min: 2100
                                                                    cm3/:0.4
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.8)
Calibrating-oil inlet temp. °C : 38...42
                                                                    1/min: 300.0
                                                      2nd soeed
                                                      Contr.-rod trav. m: 8.8...9.0
Del.quantity cm3/: 1.5...2.1
100H.: (1.2...2.3)
Dispersion cm3/: 0.4
Overflow valve
                    : 1 417 413 025
                                                                    100H.: (0.7)
Inlet press., bar : 1.50
                                                      (B) Setting of injection pump with
Overflow
                                                          externally-mounted governor
 quantity min. 1/h: 100...120
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 300
Calibrating nozzle-holder
 assembly : 0 681 343 009
                                                        Sleeve travel mm: 1.30...1.50
                                                      2nd speed 1/min: 500
                                                        Sleeve travel mm: 5.50...5.70
Opening
                                                      3rd speed 1/min: 900
pressure, bar : 172...175
                                                        Sleeve travel mm: 6.90...7.20
                                                      4th speed 1/min: 1050

Sleeve travel mm: 7.60...7.90

5th speed 1/min: 1100

Sleeve travel mm: 10.10...10.60
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
                    : 6.00x1.50x600
                                                      SLEEVE POSITION
x Length mm
                                                      Control-lever position
                                                                   Degree: 108
(A) Injection pump setting values
                                                                    17min: 600
    Insp. values in parentheses
Set constant delivery quant.
                                                      Speed
                                                      Cont.-rod travelmm: 14.70...15.70
    per values
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
Test pressure, bar: 25...27
                                                      1st version
                                                                   1/min: 1050
                                                      Speed
```

```
Del.quantity cm3/ : 132.0...134.0
             1000H.: (129.5...136.5)
            cm3/ : 4.00
Dispersion
             1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 40...48
Setting point:
            1/min : 600
Speed
Contr.-rod trav.mm: 15.2
Testing:
1st c-rod trav.mm : 11.90
         1/min : 1095...1110
  Speed
2nd c-rod trav.mm : 4.00
            1/min : 1150...1180
  Speed
4th speed 1/min: 1300
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Control-lever
 position degrees: 9...17
Setting point w/out aux. spring
Speed
            1/min : 300
Contr.-rod trav.mm: 8.9
Testing:
            1/min : 200
Speed
C-rod trav.mm min : 10.50
            1/min : 300
Speed
C-rod trav.mm
                   : 8.80.
                            9.00
C-rod trav.mm
                   : 2.Gi
            1/min : 450...490
Speed
            1/min : 550
Speed
C-rod trav.mm max : 1.80
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 1050
1st speed
  C-rod trav.mm
                   : 12.90...13.00
2nd speed 1/min: 600
  C-rod trav.mm : 12.80...13.00
3rd speed 1/min: 750
                   : 13.20...13.40
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
            1/min : 600
Speed
Del.quantity cm3/: 119.0...122.0
            1000H.: (116.0...125.0)
cm3/: 8.00
1000H.: (11.0)
1/min: 900
Dispersion
Speed
Del.quantity cm3/: 130.0...134.0
1000H.: (127.0...137.0)
             cm3/: (8.00)
Dispersion
ROTATIONAL-SPEED LIMITATION
```

1st version
1mm control-rod travel less than
full-load trav.mm: 11.90
Speed 1/min: 1095...1110
STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

Remarks:

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BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet : KHD 15.8 0
Edition : 14.08.87
Superceeded : 9.3.87
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 849 729
Injection pump
Pump designation : PE10P110A920/5L83073
EP type number : 0 411 819 701
Governor
Governor design. : RQV300...1150PA816
Governer no. : 0 421 813 559
Customer-spec. information
Customer
                   : KHD
Engine
                   : BF10L413F
1st version kW : 252.0
Speed 1/min: 2300
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                    : 1 417 413 025
Inlet press., bar : 1.50
Calibrating nozzle-holder
 assembly
              : 0 681 343 009
Opening
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values
START OF DELIVERY
Test pressure, bar: 25...27
                    : 2.80...2.90
Prestroke mm
                    : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
```

: 1- 10- 9- 4- 3- 6-Dispersion cm3/ : 4.00 Cam sequence 5- 8- 7- 2 1000H.: (7.50) HIGHEST RATED SPEED 1st version SD ang. spacing CS: 0-27-72-99-144-171-216-243-288-315 Control-lever position degrees: 59...67 Tolerance + - 0 : 0.50 (0.75) Testing: SD mark cyl. no. : 1 1st c-rod trav.mm: 9.60 Speed 1/min: 1180...1190 2nd c-rod trav.mm : 4.00 BASIC SETTING Speed 1/min: 1265...1295
th speed 1/min: 1400
C-rod trav.mm: 0.00...1.00 1/mi: 1150 1st speed 4th speed Contr.-rod trav.mm: 10.60...10.70 LOWEST RATED SPEED I Del.quantity cm3/: 12.0...12.2 Control-lever position degrees: 15...23 100H.: (11.7...12.4) Testing: Speed 1/min: 100 C-rod trav.mm min: 8.20 Speed 1/min: 300 Dispersion cm3/:0.4100H.: (0.7) C-rod trav.mm : 6.70...6.90 2nd speed 1/min: 300.0 Contr.-rod trav. m: 6.7...6.9 CONSTANT REGULATION Del.quantity cm3/: 1.4...1.9 100H.: (-) Dispersion cm3/: 0.4 100H.: (0.7) 1/min : 320...480 Speed compensator (LDA, ADA, ALDA) (B) Setting of injection pump with 1st version Setting externally-mounted governor 1/min : 500 hPa : 700 Speed SLEEVE TRAVELS Pressure 1st speed 1/min: 300
Sleeve travel mm: 1.30...1.40
2nd speed 1/min: 390
Sleeve travel mm: 2.40...2.80 Contr.-rod trav.mm: 10.60...10.70 Measurement 1/min : 500 Speed 3rd speed 1/min: 450 Sieeve travel mm: 2.80...3.20 1st pressure hPa : -C-rod trav.mm : 9.70...9.80 4th speed 1/min: 1180 2nd pressure hPa : 355 Sleeve travel mm: 8.30...8.40 G-rod trav.mm : 10.40...10.50 3rd pressure hPa : 310 C-rod trav.mm : 9.90...10.10 5th speed 1/min: 1260 Sleeve travel mm: 9.10...9.30 SLEEVE POSITION Control-lever position SWITCH-OVER POINT Degree: -1 1/min: 1190 1/min : <20 (240) Speed Speed Cont.-rod travelmm: 15.20...17.80 FUEL-DELIVERY CHARACI RISTICS FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1st version Charge press. hPa : 700 1/min: 1150 Speed Speed 1/min: 800 Charge press. hPa : 700 Del.quantity cm3/: 120.0...122.0 1000H.: (117.5...124.5) Del.quantity cm3/: 116.0...120.0 1000H.: (113.0...123.0) **B24**

Charge press. hPa : Speed 1/min : 500
Del.quantity cm3/ : 95.0...99.0
1000H.: (92.5...101.5)
ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 9.60 Speed 1/min: 1180...1190

STARTING FUEL DELIVERY

Remarks:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

APPLICATION Excavator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 3.90...4.00
                                                      Prestroke mm
                                                                          : (3.85...4.05)
Note inst. in remarks column
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                                         : 10- 9- 4- 1-
                                                                                           8- 7
                                                      Cam sequence
Test sheet
Edition
Superceeded
                   : MAN 18.2 C
: 26.06.87
                                                                            - 6- 3- 5-
                   : 12.9.86
Calibrating oil : ISO-4113
                                                      SD ang. spacing<sup>o</sup>CS: 0-45-72-117-144-189-
                    : 0 401 849 734
                                                                            216-261-288-333
Combination no.
                                                      Tolerance + - 0
                                                                          : 0.50 (0.75)
Injection pump
Pump designation : PE10P120A520/5LS3843
                                                      SD mark cyl. no. : 10
                   : 0 411 829 707
EP type number
                                                      BASIC SETTING
Governor
Governor design. : RQ300/1000PA837
                                                                     1/mi: 1000
Governer no. : 0 421 801 372
                                                      1st speed
Customer-spec. information
                                                      Contr.-rod trav.mm: 11.30...11.40
Customer
                   : MAN
                                                      Del.quantity cm3/: 20.1...20.3
                    : D2840LF
Engine
                                                                    100H.: (19.8...20.6)
1st version kW : 338.0
              1/min: 2000
                                                                    cm3/:0.5
Speed
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.9)
Calibrating-oil inlet temp. C
                                                                    1/min: 300.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/: 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/: 0.8
                    : 38.,.42
Overflow valve
                    : 1 417 413 025
                                                                    100H.: (1.2)
Inlet press., bar : 1.50
                                                      SLEEVE POSITION
Calibrating nozzle-holder
                                                      Control-lever position
                                                                   Degree: -2
1/min: 600
                 : 1 688 901 019
 assembly
                                                      Speed
Opening
                                                      Cont.-rod travelmm: 19.20...20.80
                   : 207...210
 pressure, bar
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 diameter mm
                    : 0,8
                                                      1st version
                                                                    1/min: 1000
                                                      Speed
                                                     Charge press. hPa: 1000
Del.quantity cm3/: 201.0...203.0
1000H.: (198.0...206.0)
Dispersion cm3/: 5.00
Test inj. tubing
                   : 1 680 750 067
Outside diameter
                                                                   1000H.: (9.00)
x Wall thickness
x Length mm
                    : 6.00x1.50x1000
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
                                                      Setting point:
    Set constant delivery quant.
                                                               1/min : 600
                                                      Speed
    per values
                                                      Contr.-rod trav.mm: 20.0
START OF DELIVERY
                                                      Testing:
Test pressure, bar: 25...27
                                                      1st c-rod trav.mm : 10.30
                                                        Speed 1/min: 1045...1060
```

2nd c-rod trav.mm : 4.00 Speed 1/min : 1125...1155 4th speed 1/min : 1250 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 250 6.1 Setting point w/out aux. spring 1/min : Contr.-rod trav.mm: 00 7.60 25 Testing: 1/min : 0 6. Speed C-rod trav.mm min : 00...6 Speed 1/min : .20 C-rod trav.mm : 2.00 365...4 05 0 C-rod trav.mm TORQUE CONTROL Torque-control curve - 1st version 1/min : 1000 1st speed C-rod trav.mm : 11.80...11.90 2nd speed 1/min: 600 C-rod trav.mm : 11.80...12.00 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 1000 Contr.-rod trav.mm: 11.30...11.40 Measurement 1/min : 500 Speed 1st pressure hPa : 10.10...10.20 C-rod trav.mm : 530 2nd pressure hPa C-rod trav.mm : 10.40...10.50 : 650 3rd pressure hPa : 10.90...11.10 C-rod trav.mm SWITCH-OVER POINT 1/min : 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) ROTATIONAL-SPEED LIMITATION 1st version

1mm control-rod travel less than

full-load trav.mm: 10.30 1/min : 1045...1060 Speed

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/: 190.0...210.0 1000H.: (186.0...214.0)

LOW IDLE

1/min : 300 Speed

Contr.-rod trav.mm: 6.00...6.20 Del.quantity cm3/: 17.0...23.0 1000H.: (14.0...26.0) Dispersion cm3/: 8.00 1000H.: (12.00)

Remarks:

: MAN-NR. 2-7778

Note inst. in remarks column

Test sheet : MAN 18,2 C1
Edition : 26.06.87
Superceeded : 12.9.86
Calibrating oil : ISO-4113

Combination no. : 0 401 849 735

Injection pump

Pump designation : PE10P120A520/5L83843 EP type number : 0 411 829 707

Governor

Governor design. : RQV300...1000PA838 Governer no. : 0 421 813 585

Customer-spec. information Customer : MAN

Engine : D2840LF

1st version kW : 338.0 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00X1.50X1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

START OF DELIVERY
Test pressure, bar: 25...27

Del.quantity cm3/: 201.0...203.0 1000H:: (198.0...206.0) Dispersion cm3/: 5.00 Prestroke mm : 3.90...4.00 : (3.85...4.05) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 10- 9- 4- 1-- 6- 3- 5-1000H.: (9.00) 8- 7 HIGHEST RATED SPEED Setting point: SD ang. spacing CS: 0-45-72-117-144-189-Speed 1/min : 1150 216-261-288-333 Contra-rod trav.mm: 16.5 Tolerance + - 0 : 0.50 (0.75) Testing: 1st c-rod trav.mm : 10.30 Speed 1/min : 1040...1050 SD mark cyl. no. : 10 BASIC SETTING 2nd c-rod trav.mm : 4.00 1/min : 1115...1145 1st speed 1/mi: 1000 1/min : 1250 4th speed C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 11.30...11.40 LOWEST RATED SPEED I Del.quantity cm3/: 20.1...20.3 Setting point w/out aux. spring Speed 1/min : 250 100H.: (19.8...20.6) Contr.-rod trav.mm: 6.1 Dispersion cm3/:0.5Testing: Speed 1/min : 100 C-rod trav.mm min: 7.60 190H.: (0.9) 1/min : 250 Speed 2nd speed 1/min: 300.0 C-rod trav.mm : 6.00...6.20 Contr.-rod trav. m: 6.0...6.2 Del.quantity cm3/: 1.7...2.3 CONSTANT REGULATION 1/min : 335...445 100H.: (1.4...2.6) Speed cm3/:0.8Dispersion 100H.: (1.2) compensator (LDA, ADA, ALDA) (B) Setting of injection pump with externally-mounted governor 1st version Setting 1/min : 500 SLEEVE TRAVELS Speed Pressure hPa : 1000 1st speed 1/min: 300 Contr.-rod trav.mm: 11.30...11.40 Sleeve travel mm: 1.00...1.40 2nd speed 1/min: 500 Steeve travel mm: 3.10...3.50 3rd speed 1/min: 850 Measurement 1/min : 500 Speed Sleeve travel mm: 6.60,..6.90 4th speed 1/min: 1000 1st pressure hPa : -Sleeve travel mm: 7.70...7.90 C-rod trav.mm : 10.10...10.20 2nd pressure hPa : 530 SLEEVE POSITION C-rod trav.mm : 10.40...10.50 Control-lever position 3rd pressure hPa : 650 Degree: -1 1/min: 1150 C-rod trav.mm : 10.90...11.10 Speed Cont.-rod travelmm: 15.20...17.80 SWITCH-OVER POINT FULL-LOAD DELIV. AT FULL-LOAD STOP Speed 1/min : 230 (250) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : -1/min: 1000 Speed Charge press. hPa : 1000 Speed 1/min : 500

```
Del.quantity cm3/: 144.0...146.0
                1000H.: (141.0...149.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.30
Speed
            1/min : 1040...1050
STARTING FUEL DELIVERY
Speed
                1/min : 100
Del.quantity cm3/: 190.0...210.0
1000H.: (186.0...214.0)
LOW IDLE
Speed 1/min: 300

Contr.-rod trav.mm: 6.00...6.20

Del.quantity cm3/: 17.0...23.0

1000H.: (14.0...26.0)

Dispersion cm3/: 8.00
                1000H.: (12.00)
Remarks:
                        : MAN-NR. 2-7779
```

Note inst. in remarks column

Test sheet Edition Superceeded : MB 18,3 K : 26.06.87

Calibrating oil : ISO-4113

: 0 401 849 737 Combination no.

Injection pump

Pump designation : PE10P110A320LS3844

EP type number : 0 411 819 710

Governor

Governor design. : RQ300/1050PA827-5K Governer no. : 0 421 803 097

Customer-spec. information

: DAIMLER-BENZ Customer

: OM 443 Engine

1st version kW : 265.0

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Over flow

quantity min. 1/h: 130...150

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00X1.50X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 25...27

1		
Prestroke mm :	(3.954.15)	Del.quantity cm3/: 133.0135.0 1000H.: (130.5137.5)
Contrrod trav.mm: Cam sequence :	9.0012.00 I 10- 9- 4- 1- 8- 7 I	Dispersion cm3/ : 4.00 1000H.: (8.00)
	- 6- 3- 5- 2	HIGHEST RATED SPEED
	i	1st version
SD ang. spacing CS:	0-45-72-117-144-189-	Control-lever position degrees: 102110
Tolerance + - 0 :	216-261-288-333 I	Setting point:
SD mark cyl. no. :	10	Speed 1/min : 600 Contrrod trav.mm: 16.6
BASIC SETTING		Testing: 1st c-rod trav.mm : 11.90
1st speed 1/mi:	1050	Speed 1/min: 10951110 2nd c-rod trav.mm: 4.00
Contrrod trav.mm:	12.9013.00	Speed 1/min: 11601190 4th speed 1/min: 1300
Del.quantity cm3/:	13.313.5	C-rod trav.mm : 0.001.50
100H.:	(13.013.7)	LOWEST RATED SPEED I Control-lever
Dispersion cm3/:	0.4	position degrees: 7886
100H.:	(0.8)	Setting point w/out aux. spring Speed 1/min : 300 Contrrod trav.mm: 8.0
2nd speed 1/min:	300.0	Contrrod trav.mm: a.o
Contrrod trav. m:	7.98.1	Testing:
Del.quantity cm3/: 100H.:	1.52.1	Speed 1/min : 200 C-rod trav.mm min : 9.30
Dispersion cm3/:	0.4 i	Speed 1/min: 300
100H.:	(0.7)	C-rod trav.mm : 7.908.10 C-rod trav.mm : 2.00
(8) Setting of injection	ction pump with	Speed 1/min: 390430
	!	TORQUE CONTROL
SLEEVE TRAVELS 1st speed 1/min:	300	Torque-control curve - 1st version 1st speed 1/min : 1050
Sleeve travel mm:	1.601.80	C-rod trav.mm : 12.9013.00
2nd speed 1/min: Sleeve travel mm:		2nd speed
3rd speed 1/min:		3rd speed 1/min : 900
Sleeve travel mm:		C-rod trav.mm : 13.2013.40
4th speed 1/min: Sleeve travel mm:	7.607.90	FUEL-DELIVERY CHARACTERISTICS
5th speed 1/min:	1100	Speed 1/min: 600
Sleeve travel mm:	9.5010.00	Del.quantity cm3/: 119.0122.0 1000H.: (116.0125.0)
SLEEVE POSITION Control-lever posit	ion !	Dispersion cm3/: 6.00 1000H.: (9.00)
Degree:	108	Speed 1/min: 900
Speed 17min: Controd travelmm:		Del.quantity cm3/: 127.0131.0 1000H.: (124.0134.0)
Tomically and are com:	10,.0,,,17,50	Dispersion cm3/: 6.00
FULL-LOAD DELIV. AT	FULL-LOAD STOP	1000H.: (9.00)
1st version Speed 1/min:	1050	ROTATIONAL-SPEED LIMITATION
c04		

1st version 1mm control-rod travel less than full-load trav.mm: 11.90 Speed 1/min: 1095...1110 Speed STARTING FUEL DELIVERY Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0) Remarks:

Note inst. in remarks column

Test sheet Edition Superceeded : KHD 16.0 D2 : 24.07.87

Calibrating oil : ISO-4113

: 0 401 849 740 Combination no.

Injection pump

Pump designation : PE10P110A920/5L\$3164

EP type number : 0 411 819 708 Governor

Governor design.: RQV300...1150PA549-3 Governer no. : 0 421 813 664

Customer-spec. information Customer : KHD

Engine : BF10L513

1st version kW : 294.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00X1.50X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90

: (2.75...2.95)

Contr.-rod trav.mm: 9.00...12.00

```
: 1-10- 9- 4- 3- 6-
5- 8- 7- 2
                                                         Dispersion cm3/ : 4.00
Cam sequence
                                                                       1000H.: (7.50)
                                                         HIGHEST RATED SPEED
                                                         1st version
SD ang. spacing CS: 0-27-72-99-144-171-
                                                         Control-lever
                       216-243-288-315
                                                          position degrees: 61...69
Tolerance + - D
                     : 0.50 (0.75)
                                                         Testing:
SD mark cyl. no. : 1
                                                         1st c-rod trav.mm : 11.80
                                                         Speed 1/min: 1195...1205
2nd c-rod trav.mm: 4.00
BASIC SETTING
                                                           Speed 1/min: 1295...1325
h speed 1/min: 1450
                                                                       1/min: 1450
1st speed
             1/mi: 1150
                                                         4th speed
                                                           C-rod trav.mm : 0.00...1.00
Contr.-rod trav.mm: 12.80...12.90
                                                         LOWEST RATED SPEED I
Del.quantity cm3/: 14.8...15.0
                                                         Control-lever
                                                          position degrees: 9...17
               100H.: (14.5...15.3)
                                                         Testing:
Dispersion
                                                                       1/min : 100
               cm3/:0.4
                                                         Speed
                                                         C-rod trav.mm min: 7.90
                                                         Speed 1/min: 300
               100H.: (0.7)
                                                         C'-rod trav.mm
                                                                              : 6.40...6.60
               1/min: 300.0
2nd speed
Contr.-rod trav. m: 6.4...6.6

Del.quantity cm3/: 1.2...1.7

100H.: (1.0...2.0)

Dispersion cm3/: 0.4

100H.: (0.7)
                                                         CONSTANT REGULATION
                                                                      1/min : 300...530
                                                         Speed
                                                         TORQUE CONTROL
                                                         Dimension a mm
                                                                              : 0.40
                                                         Torque-control curve - 1st version
(B) Setting of injection pump with
                                                         1st speed 1/min: 1150
                                                         C-rod trav.mm : 12.80...12.90
2nd speed 1/min : 650
    externally-mounted governor
                                                                      1/min: 840 : 13.20...13.30
SLEEVE TRAVELS
                                                           C-rod trav.mm
1st speed 1/min: 300
Sleeve travel mm: 1.00...1.40
                                                         3rd speed
                                                           C-rod trav.mm : 13.10...13.30
             1/min: 450
                                                                     1/min : 1010
2nd speed
                                                         4th speed
Sleeve travel mm: 2.60...3.20
3rd speed 1/min: 700
                                                           C-rod trav.mm : 12.90...13.10
  Sleeve travel mm: 4.40...5.00 th speed 1/min: 1195 Sleeve travel mm: 8.10...8.30
                                                         Pressure
                                                                     hPa : 1200
4th speed
                                                         Contr.-rod trav.mm: 13.20...13.30
Sth speed 1/min: 1310
Sleeve travel mm: 9.20...9.60
                                                         1st pressure hPa : -
                                                           C-rod trav.mm : 11.70...11.80
                                                         2nd pressure hPa : 850
SLEEVE POSITION
                                                           C-rod trav.mm : 12.75...12.85
                                                         3rd pressure hPa : 370
Control-lever position
              Degree: -1
                                                           C-rod trav.mm
                                                                              : 12.00...12.20
Speed 1/min: 1220
Cont.-rod travelmm: 15.20...17.80
                                                         FUEL-DELIVERY CHARACTERISTICS
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                         1st version
                                                         Charge press. hPa : 1200
1st version
                                                                       1/min : 650
Speed
               1/min: 1150
                                                         Speed
Charge press. hPa : 1200
Del.quantity cm3/ : 148.5...150.5
1000H.: (145.0...153.0)
                                                         Del.quantity cm3/: 154.0...158.0
1000H.: (151.0...161.0)
                                                         Charge press. hPa : -
C07
```

```
1/min : 450
Speed
Del.quantity cm3/: 118.5...121.5
1000H.: (116.0...124.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.80
Speed
               1/min: 1195...1205
STARTING FUEL DELIVERY
                1/min : 100
Speed
Del.quantity cm3/: 135.0...165.0
1000H.: (131.0...169.0)
LOW IDLE
Speed 1/min: 300
Contr.-rod trav.mm: 6.40...6.60
Del.quantity cm3/: 12.5...17.5
1000H.: (10.0...20.0)
Dispersion cm3/: 4.50
1000H.: (7.50)
Remarks:
```

Note inst. in remarks column

Test sheet : IFS 30.8 A : 27.03.87 Edition

Superceeded

Calibrating oil : ISO-4113

: 0 401 868 025 Combination no.

Injection pump

Pump designation : PE8P130A520/6LS450-1

EP type number : 0 411 838 039

Governor

: RSUV250...825P10A342 Governor design.

Governer no. : 0 421 829 081

Customer-spec. information

Customer : ISOTTA-FRASCHINI

: ID36N-8V Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00X1.50X1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60

: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 2- 6- 3- 4- 5- 7- 8 SD ang. spacing^oCS: 0-45-90-135-180-225-270-315 Tolerance $+ - ^{0}$: 0.50 (0.75) BASIC SETTING 1st speed 1/mi: 825 Contr.-rod trav.mm: 10.00...10.10 Del.quantity cm3/: 18.6...18.9 100H.: (18.2...19.2) Dispersion cm3/:0.6100H.: (1.0) 1/min: 250.0 2nd speed Contr.-rod trav. m: 6.8...7.0 Del.quantity cm3/: 2.0...2.6 100H:: (1.6...3.0) Dispersion cm3/: 1.0 100H:: (1.4) SLEEVE POSITION Control-lever position Degree: -3 17min: 800 Cont.-rod travelmm: 0.30...1.40 Governor-spring reload Notch setting x : 3.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 825
Del.quantity cm3/: 186.0...189.0
1000H.: (182.5...192.5)
Dispersion cm3/: 6.00 1000H.: (10.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 47...55 Testing: 1st c-rod trav.mm : 9.00 Speed 1/min: 865...875 2nd c-rod trav.mm : 4.00 Speed 1/min: 875...905 3rd c-rod trav.mm : 4.00

Speed 1/min: 880...910 4th speed 1/min: 1050 G-rod trav.mm: 0.30...1.70

LOWEST RATED SPEED I
Control-lever
position degrees: 13...21
Setting point w/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 6.4

Speed 1/min: 250 C-rod trav.mm: 6.80...7.00 C-rod trav.mm: 2.00 Speed 1/min: 285...345

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 825
C-rod trav.mm: 10.00...10.10
2nd speed 1/min: 450
C-rod trav.mm: 10.00...10.20
3rd speed 1/min: 300
C-rod trav.mm: 11.20...11.80

ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 9.00 Speed 1/min: 865...875

LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 6.80...7.00 Del.quantity cm3/: 20.0...26.0 1000H.: (16.0...30.0) Dispersion cm3/: 10.00 1000H.: (14.00)

Remarks:

: 2.80...2.90 : (2.75...2.95) BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 : 1- 2- 9-10- 5- 6-Cam sequence : MWM 21.6 A2 : 09.03.87 11- 12- 3- 4- 7- 8 Test sheet Edition Superceeded : ISO-4113 Calibrating oil SD ang. spacing CS: 0-30-60-90-120-150-180-210-240-270-300-: 0 401 870 090 Combination no. 330 Tolerance + - 0 : 0.50 (0.75) Injection pump : PE12P12OA52O/5RS428-Pump designation BASIC SETTING EP type number : 0 411 820 034 1st speed 1/mi: 1150 Governor : RSUV300...1150P0A324 Governor design. Contr.-rod trav.mm: 9.60...9.70 Governer no. : 0 421 829 104 Del.quantity cm3/: 17.0...17.4 Customer-spec. information 100H.: (16.7...17.7) Customer : MWM cm3/:0.5: TBD 234 V 12 Dispersion Engine TEST BENCH REQUIREMENTS 100H.: (0.9) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 5.9...6.1 Del.quantity cm3/: 2.8...3.6 100H.: (2.5...3.9) Dispersion cm3/: 0.8 Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 100H.: (1.2) Inlet press., bar : 1.50 SLEEVE POSITION Calibrating nozzle-holder Speed 1/min: 800 Cont.-rod travelmm: 0.30...1.00 : 1 688 901 019 assembly Governor-spring reload Opening : 207...210 pressure, bar Notch setting x : 2.00 HIGHEST RATED SPEED Perforated-plate 1st version diameter mm : 0,8 Control-lever position degrees: 60...68 Test inj. tubing : 1 680 750 067 Testing: 1st c-rod trav.mm : 8.60 Outside diameter Speed 1/min: 1190...1200 x Wall thickness 2nd c-rod trav.mm : 4.00 : 6.00x1.50x1000 x Length mm 1/min : 1205...1235 1/min : 1370 Speed (A) Injection pump setting values 4th speed Insp. values in parentheses Set constant delivery quant. C-rod trav.mm : 0.30...1.70 per values LOWEST RATED SPEED I Control-lever position degrees: 17...25 START OF DELIVERY Setting point W/out aux. spring Speed 1/min: 300 Test pressure, bar: 25...27 Contr.-rod trav.mm: 5.5

Speed 1/min : 300
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.00
Speed 1/min : 350...410

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 8.60

Speed 1/min : 1190...1200

STARTING FUEL DELIVERY

1/min : 100 Speed

Del.quantity cm3/: 240.0...260.0 1000H.: (236.0...264.0)

Remarks:

Full-load delivery not known. Set according to engine test report.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Test pressure, bar: 25...27
Note inst. in remarks column
                                                                         : 4.00...4.10
                                                      Prestroke mm
Test sheet
                                                                         : (3.95...4.15)
                                                     Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7
                   : MB 21,9 Q
: 09.03.87
Superceeded
                   : 19.12.86
Calibrating oil : ISO-4113
                   : 0 401 870 700
Combination no.
                                                     SD ang. spacing CS: 0-45-60-105-120-165-
Injection pump
                                                                           180-225-240-285-300-
Pump designation : PE12P11DA32OL$3820-
                                                                           345
                                                                         : 0.50 (0.75)
                                                      Tolerance + - 0
EP type number
                    : 0 411 810 706
Governor
                                                      SD mark cyl. no. : 12
                    : RSV425...1050POA824-
Governor design.
                                                     BASIC SETTING
Governer no.
                    : 0 421 833 218
                                                                    1/mi: 1000
                                                      1st speed
Customer-spec. information
                                                      Contr.-rod trav.mm: 11.40...11.50
Customer
                    : DAIMLER-BENZ
Engine
                    : OM 424
                                                      Del.quantity cm3/: 11.5...11.7
                  : 286.0
                                                                    100H.: (11.2...11.9)
1st version kW
              1/min: 2100
Speed
                                                     Dispersion
                                                                    cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.8)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                    1/min: 425.0
                                                     2nd speed
                                                     Contr.-rod trav. m: 7.5...7.8
Del.quantity cm3/: 1.4...2.0
Overflow valve
                                                                   100H.: (1.1...2.2)
cm3/: 0.4
100H.: (0.7)
                    : 1 417 413 025
                                                     Dispersion
Inlet press., bar: 1.50
Overflow
                                                     SLEEVE POSITION
 quantity min. 1/h: 150...170
                                                     Control-lever position
                                                                  Degree: -3
                                                                   17min: 800
Calibrating nozzle-holder
                                                     Speed
             : 0 681 343 009
                                                     Cont.-rod travelmm: 0.30...0.70
 assembly
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                     1st version
                                                                    1/min: 1900
                                                     Speed
Test inj. tubing : 1 680 750 015
                                                     Del.quantity cm3/: 115.0...117.0
                                                                  1000H.: (112.5...119.5)
cm3/: 4.00
Outside diameter
                                                     Dispersion
x Wall thickness
                                                                  1000H.: (8.00)
                   : 6.00x1.50x600
x Length mm
                                                     HIGHEST RATED SPEED
(A) Injection pump setting values
                                                     1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                     Control-lever
                                                      position degrees: 34...42
    per values
                                                     Testing:
START OF DELIVERY
                                                     1st c-rod trav.mm : 10.40
C14
```

```
Speed 1/min: 1065...1070
2nd c-rod trav.mm: 4.00
  Speed
            1/min : 1120...1133
LOWEST RATED SPEED I
Control-lever
 position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min: 425
Contr.-rod trav.mm: 7.9
Testing:
Speed
             1/min : 100
C-rod trav.mm min: 9.30
         1/min : 425
Speed
                   : 7.80...8.00
C-rod trav.mm
SET IDLE AUXILIARY SPRING
Speed
            1/min : 2.00
FUEL-DELIVERY CHARACTERISTICS
            1/min : 600
Speed
Del.quantity cm3/ : 95.0...100.0
             1000H.: (92.0...103.0)
             cm3/: 6.00
1000H.: (9.00)
Dispersion
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
full-load trav.mm: 10.40
           1/min : 1065...1070
Speed
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 130.0...150.0
1000H.: (126.0...154.0)
Remarks:
Observe VDT-I-420/120
Û
```

```
: 4.00...4.10
: (3.95...4.15)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Prestroke mm
                                                     Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                                       : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7
                                                     Cam sequence
                   : MB 21,9 Q 1
: 15.05.87
Test sheet
Edition
                   : 12.9.86
Superceeded
Calibrating oil : ISO-4113
                                                     $D ang. spacing CS: 0-45-60-105-120-165-
                                                                          180-225-240-285-300-
Combination no.
                   : 0 401 870 701
                                                     SD ang. spacing CS: 345
Tolerance + - : 0.50
                                                                      : 0.50 (0.75)
Injection pump
Pump designation : PE12P110A320LS3820-
                                                     SD mark cyl. no. : 12
EP type number
                    : 0 411 810 706
Governor
                                                     BASIC SETTING
Governor design. : RSV350...750P0A824-5
Governer no.
                   : 0 421 833 231
                                                     1st speed
                                                                    1/mi: 700
Customer-spec. information
                                                     Contr.-rod trav.mm: 12.70...12.80
Customer
                   : DAIMLER-BENZ
                                                     Del.quantity cm3/: 12.6...12.8
Engine
                   : OM 424
                                                                   100H.: (12.3...13.0)
1st version kW
                  : 247.0
                                                     Dispersion
                                                                   cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.8)
Calibrating-oil inlet temp. OC
                                                     2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.7...7.9
                   : 38...42
                                                     Del.quantity cm3/: 1.4...2.0
Overflow valve
                                                                   100H.: (1.1...2.2)
                    : 1 417 413 025
                                                                  cm3/:0.4
                                                    Dispersion
                                                                   100H.: (0.7)
Inlet press., bar : 1.50
                                                     SLEEVE POSITION
Over flow
 quantity min. 1/h: 150...170
                                                     Control-lever position
                                                                 Degree: -3
                                                                  17min: 800
Calibrating nozzle-holder
             : 0 681 343 009
                                                    Cont.-rod travelmm: 0.30...1.40
 assembly
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                     1st version
                                                                   1/min: 700
                                                     Speed
Test inj. tubing : 1 680 750 015
                                                    Del.quantity cm3/: 126.0...128.0
                                                                  1000H.: (123.5...130.5)
Outside diameter
                                                                 cm3/ : 4.00
                                                    Dispersion
                                                                 1000H.: (8.00)
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                    HIGHEST RATED SPEED
(A) Injection pump setting values
                                                    1st version
                                                    Control-lever
    Insp. values in parentheses
    Set constant delivery quant.
                                                     position degrees: 22...30
    per values
                                                    Testing:
                                                    1st c-rod trav.mm : 11.70
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
START OF DELIVERY
Test pressure, bar: 25...27
C16
```

```
1/min : 780...793
  Speed
LOWEST RATED SPEED I
Control-lever
 position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min: 350
Contr.-red trav.mm: 7.8
Testing:
Speed 1/min: 100
C-rod trav.mm min: 19.00
Speed 1/min: 350
C-rod trav.mm : 7.70...7.90
Testing:
SET IDLE AUXILIARY SPRING
Speed 1/min : 2.00
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.40
Speed
             1/min : 1170...1180
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 140.0...160.0
1000H.: (136.0...164.0)
Remarks:
Observe VDT-I-420/120
0
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Test pressure, bar: 25...27
                                                                         : 4.00...4.10
: (3.95...4.15)
Note inst. in remarks column
                                                     Prestroke mm
                    : MB 21,9 Q 2
                                                     Contr.-rod trav.mm: 9.00...12.00
Test sheet
                    : 10.09.87
                                                     Cam sequence : 12- 1- 5- 9- 8- 3-
Edition
                                                                           4- 11- 10- 2- 6- 7
Superceeded
Calibrating oil
                   : ISO-4113
Combination no.
                   : 0 401 870 706
                                                     SD ang. spacing CS: 0-45-60-105-120-165-
Injection pump
                                                                           180-225-240-285-300-
Pump designation
                   : PE12P110A320LS3820-
                                                                           345
                                                     Tolerance + - 0
                                                                         : 0.50 (0.75)
                   : 0 411 810 710
EP type number
Governor
                                                     SD mark cyl. no. : 12
                   : RSV425...1050P0A824-
Governor design.
                                                     BASIC SETTING
                   : 0 421 833 251
Governer no.
                                                     1st speed
                                                                    1/mi: 1000
Customer-spec. information
                                                     Contr.-rod trav.mm: 11.40...11.50
Customer
                   : DAIMLER-BENZ
                                                     Del.quantity cm3/: 11.5...11.7
Engine
                   : OM 424
1st version kW : 286.0
                                                                   100H.: (11.2...11.9)
              1/min: 2100
Speed
                                                     Dispersion
                                                                   cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.8)
Calibrating-oil inlet temp. °C
                                                    2nd speed 1/min: 425.0

Contr.-rod trav. m: 7.8...8.0

Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/: 0.4

100H.: (0.7)
                   : 38...42
Overflow valve
                   : 1 417 413 025
Inlet press., bar: 1.50
                                                     SLEEVE POSITION
Overflow
 quantity min. 1/h: 150...170
                                                     Control-lever position
                                                                  Degree: -3
                                                                   17min: 800
Calibrating nozzle-holder
                   : 0 681 343 009
                                                     Cont.-rod travelmm: 0.30...0.70
 assembly
                                                    Governor-spring reload
Opening
pressure, bar : 172...175
                                                    Notch setting x :?
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 015
                                                     1st version
                                                    Outside diameter
x Wall thickness
x Length mm
                   : 6.00x1.50x600
                                                                  1000H.: (8.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    HIGHEST RATED SPEED
    per values ____
                                                     1st version
                                                    Control-lever
                                                      position degrees: 34...42
START OF DELIVERY
C18
```

```
Testing:
1st c-rod trav.mm : 10.40
  Speed 1/min: 1170...1180
2nd c-rod trav.mm : 4.00
             1/min : 1235...1265
  Speed
LOWEST RATED SPEED I
Control-lever
 position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min: 425
Contr.-rod trav.mm: 7.9
Testing:
              1/min : 100
Speed
C-rod trav.mm min: 9.30
             1/min : 425
mm : 7.80...8.00
Speed
C-rod trav.mm
SET IDLE AUXILIARY SPRING
              1/min : 2.00
Speed
FUEL-DELIVERY CHARACTERISTICS
              1/min : 600
Speed
Del.quantity cm3/: 95.0...100.0
1000H.: (92.0...103.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.40
              1/min : 1170...1180
Speed
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 130.0...150.0
1000H.: (126.0...154.0)
Remarks:
Observe VDT-I-420/120
0
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 4.00...4.10
                                                     Prestroke mm
                                                                         : (3.95...4.15)
Note inst. in remarks column
                                                     Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 12- 1- 5- 9- 8- 3-
Test sheet
                    : MB 21,9 T 1
                                                                           4- 11- 10- 2- 6- 7
Edition
                    : 19.12.86
Superceeded
Calibrating oil
                    : ISO-4113
                                                     SD ang. spacing CS: 0-45-60-105-120-165-
SD ang. spacing CS: 180-225-240-285-300-
Combination no.
                   : 0 401 870 706
                                                                           345
Injection pump
                                                     Tolerance + - 0
                    : PE12P110A320LS3837-1
                                                                         : 0.50 (0.75)
Pump designation
EP type number
                    : C 411 810 710
                                                     SD mark cyl. no. : 12
Governor
Governor design.
                    : RSV425...1050POA824-
                      10
                                                     BASIC SETTING
                    : 0 421 833 251
Governer no.
                                                                    1/mi: 1000
                                                     1st speed
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                     Contr.-rod trav.mm: 11.40...11.50
Engine
                   : OM 424
                                                     Del.quantity cm3/: 11.5...11.7
1st version kW : 286.0
                                                                   100H.: (11.2...11.9)
              1/min: 2100
Sneed
                                                                   cm3/:0.4
                                                     Dispersion
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.8)
Calibrating-oil inlet temp. °C
                                                     2nd speed 1/min: 425.0
Contr.-rod trav. m: 7.8...8.0
                   : 38...42
                                                     Del.quantity cm3/: 1.4...2.0
Overflow valve
                    : 1 417 413 025
                                                                   100H.: (1.1...2.2)
                                                                   cm3/: 0.4
100H.: (0.7)
                                                     Dispersion
Inlet press., bar : 1.50
Over flow
                                                     SLEEVE POSITION
 quantity min. 1/h: 150...170
                                                     Control-lever position
                                                                  Degree: -3
                                                                   17min: 800
Calibrating nozzle-holder
                                                     Speed
                   : 0 681 343 009
 assembly
                                                     Cont.-rod travelmm: 0.30...0.70
                                                     Governor-spring reload
Opening
 pressure, bar
                   : 172...175
                                                     Notch setting x :?
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 1 680 750 015
Test inj. tubing
                                                     1st version
                                                                   1/min: 1000
Outside diameter
                                                     Speed
x Wall thickness
                                                     Del.quantity cm3/: 115.0...117.0
                                                                  1000H.: (112.5...119.5) cm3/: 4.00
x Length mm
                   : 6.00x1.50x600
                                                     Dispersion
                                                                  1000H.: (8.00)
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                     HIGHEST RATED SPEED
    per values
                                                     1st version
                                                     Control-lever
START OF DELIVERY
                                                      position degrees: 34...42
Test pressure, bar: 25...27
C20
```

```
Testing:
1st c-rod trav.mm : 10.40
  Speed 1/min: 1170...1180
2nd c-rod trav.mm : 4.00
           1/min : 1235...1265
  Speed
LOWEST RATED SPEED I
Control-lever
 position degrees: 14...22
Setting point w/out aux. spring
Speed 1/min: 425
Contr.-rod trav.mm: 7.9
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 9.30
Speed 1/min: 425
C-rod trav.mm
                   : 7.80...8.00
SET IDLE AUXILIARY SPRING
             1/min : 2.00
Speed
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/: 95.0...100.0
1000H.: (92.0...103.0)
              cm3/: 6.00
Dispersion
             1000H.: (9.00)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.40
            1/min : 1170...1180
Speed
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 130.0...150.0
1000H.: (126.0...154.0)
Remarks:
Observe VDT-I-420/120
0
```

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column : 4.00...4.10 Prestroke mm : MB 21,9 S 2 : (3.95...4.15) Test sheet Edition : 13.05.87 Contr.-rod trav.mm: 9.00...12.00 Superceeded : 12- 1- 5- 9- 8- 3-Cam sequence 4- 11- 10- 2- 6- 7 Calibrating oil : ISO-4113 Combination no. : 0 401 870 708 SD ang. spacing CS: 0-45-60-105-120-165-Injection pump Pump designation : PE12P12OA32OLS3836-4 180-225-240-285-300-EP type number : 0 411 820 726 Tolerance + - 0 : 0.50 (0.75) Governor Governor design. : RSV425...1050P0A525 Governer no. : 0 421 833 254 SD mark cyl. no. : 12 Customer-spec. information BASIC SETTING Customer : DAIMLER-BENZ 1/mi: 1000 1st speed : OM 424 A Engine Contr.-rod trav.mm: 11.10...11.20 : 385.0 1st version kW 1/min: 2100 Del.quantity cm3/: 16.0...16.2 Speed TEST BENCH REQUIREMENTS 100H.: (15.7...16.5) Calibrating-oil inlet temp. OC Dispersion cm3/:0.5: 38...42 100H.: (0.8) Overflow valve 2nd speed 1/min: 425.0 Contr.-rod trav. m: 4.6...4.8 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) Dispersion cm3/: 0.8 : 1 417 413 025 Inlet press., bar : 1.50 Overflow 100H.: (1.2) quantity min. 1/h: 150...170 Calibrating nozzle-holder SLEEVE POSITION : 1 688 901 019 Control-lever position assembly Degree: -3 1/min: 800 Speed Opening : 207...210 Cont.-rod travelmm: 0.30...1.00 pressure, bar FULL-LOAD DELIV. AT FULL-LOAD STOP Perforated-plate : 0,8 diameter mm 1st version Speed 1/min: 1000 Charge press. hPa: 700 Del.quantity cm3/: 160.0...162.0 1000H.: (157.0...165.0) Dispersion cm3/: 5.00 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness 1000H.: (8.00) : 6.00X1.50X1000 x Length n (A) Injection pump setting values HIGHEST RATED SPEED Insp. values in parentheses 1st version Set constant delivery quant. Control-lever per values position degrees: 34...42

Testing: 1st c-rod trav.mm : 10.10 Speed 1/min: 1065...1070 2nd c-rod trav.mm : 4.00 1/min: 1100...1113 Speed 4th speed 1/min : 1300 C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Setting point w/out aux. spring 1/min : 425 Speed ` Contr.-rod trav.mm: 4.7 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 Speed 1/min : 425 : 4.60...4.80 C-rod trav.mm SET IDLE AUXILIARY SPRING Speed 1/min : 2.00 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa Contr.-rod trav.mm: 9.70...9.90 Measurement Speed 1/min : 500 1st pressure hPa : 320 C-rod trav.mm : 9.80...9.90 2nd pressure hPa : 450 C-rod trav.mm : 10.50...10.70 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 1/min : 650 Speed Del.quantity cm3/ : 164.0...170.0 1000H.: (161.0...173.0) cm3/: 8.00 1000H:: (12.0) Dispersion Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 128.0...130.0 1000H.: (125.0...133.0) cm3/:8.00Dispersion 1000H;: (-) ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 10.10 Speed 1/min: 1065...1070

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

Remarks:

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Observe VDT-I-420/120

APPLICATION Generator

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Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                    : DAF 11,6010
                    : 09.03.87
Edition
                    : 10.85
Superceeded
                   : ISO-4113
                                                      BASIC SETTING
Calibrating oil
Combination no.
                    : 0 401 876 293
                                                       1st speed
                                                                      1/mi: 600
                                                       Contr.-rod trav.mm: 11.70...11.80
Injection pump
Pump designation : PE6P12OA32OR$415-1Z
EP type number
                   : 0 411 826 136
                                                      Del.quantity cm3/: 17.4...17.6
Governor
                                                                     100H.: (17.1...17.9)
Governor design. : RSV250...900P5A508
Governer no.
                    : 0 421 833 193
                                                      Dispersion
                                                                     cm3/:0.5
Customer-spec. information
                                                                     100H.: (0.9)
Customer
                    : DAF
                    : DKX 1160E
                                                                     1/min: 250.0
Engine
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.7...6.9
                                                      Del.quantity cm3/: 1.4...2.0
100H:: (1.1...2.3)
Dispersion cm3/: 0.8
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                                     100H.: (1.2)
                    : 38...42
                                                      SLEEVE POSITION
Overflow valve
                    : 1 417 413 025
                                                      Control-lever position
                                                                    Degree: -3
1/min: 800
                                                      Speed
Inlet press., bar : 1.50
                                                      Cont.-rod travelmm: 0.30...0.70
Calibrating nozzle-holder
                   : 1 688 901 019
                                                      Governor-spring reload
 assembly
                                                      Notch setting x : 4.50
Opening
                    : 207...210
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
 pressure, bar
Perforated-plate
                                                      1st version
                                                                     1/min: 600
 diameter mm
                    : 0.8
                                                      Speed
                                                      Charge press. hPa: 700
Del.quantity cm3/: 174.0...176.0
1000H.: (171.0...179.0)
Dispersion cm3/: 5.00
Test inj. tubing
                    : 1 680 750 067
                                                                    1000H.: (9.00)
Outside diameter
x Wall thickness
                    : 6.00x1.50x1000
                                                      HIGHEST RATED SPEED
x Length mm
                                                      1st version
                                                      Control-lever
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       position degrees: 45...53
                                                      Testing:
    per values
                                                      1st c-rod trav.mm : 10.00
                                                                   1/min: 935...945
START OF DELIVERY
                                                        Speed
                                                      2nd c-rod trav.mm : 4.00
Test pressure, bar: 25...27
                                                                   1/min: 1010...1040
                                                        Speed
                    : 2.80...2.90
                                                      3rd c-rod trav.mm: 4.00
Prestroke mm
                    : (2.75...2.95)
                                                        Speed 1/min: 1020...1050
th speed 1/min: 1180
Contr.-rod trav.mm: 9.00...12.00
                                                      4th speed
C24
```

```
C-rod trav.mm
                  : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 22...30
Setting point w/out aux. spring
Speed
            1/min : 250
Contr.-rod tray.mm: 6.0
            1/min : 250
Speed
                 : 6.40...6.60
C-rod trav.mm
C-rod trav.mm
                  : 2.00
            1/min: 395...455
Speed
TORQUE CONTROL
Dimension a mm : 875 1
Torque-control curve - 1st version
1st speed
           1/min : 1.00.
                : ..11.10 600 1
  C-rod trav.mm
            1/min : 1.90.
2nd speed
  C-rod trav.mm : ..12.00
                             725
3rd speed 1/min : 1.50.
                             775
 C-rod trav.mm : ..11.70
                                   1
4th speed 1/min: 1.20.
                  : ..11.40
                                   0
 C-rod trav.mm
compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 600
hPa : 700
Speed
Pressure
Contr.-rod trav.mm: 11.70...11.80
Measurement
            1/min : 600
Speed
1st pressure hPa
                  : 10.40...10.60
  C-rod trav.mm
                  : 300
2nd pressure hPa
 C-rod trav.mm
                  : 11.10...11.20
3rd pressure hPa : 255
                  : 10.50...10.90
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
            1/min : 875
Speed
Del.quantity cm3/ : 170.0...174.0
            1000H.: (167.0...177.0)
            1/min : 600
Speed
Del.quantity cm3/: 140.0...142.0
1000H.: (137.0...145.0)
ROTATIONAL-SPEED LIMITATION
1st version
C25
```

1mm control-rod travel less than

full-load trav.mm: 10.00
Speed 1/min: 935...945

STARTING FUEL DELIVERY

LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 6.40...6.60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6012 Edition : 03.04.87 Superceeded : 10.85 Calibrating oil : ISO-4113

Combination no. : 0 401 876 296

Injection pump

Pump designation : PE6P12OA32ORS415-1 EP type number : 0 411 826 123

Governor

Governor design. : RSV250...1100P5A508-

2

Governer no. : 0 421 833 195

Customer-spec. information Customer : DAF

Engine : DKX 1160

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. ^{DC} : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90 : (2.75...2.95)

```
Contr.-rod trav.mm: 9.00...12.00
                                                        4th speed 1/min: 1430
Cam sequence : 1-5-3-6-2-4
                                                          C-rod trav.mm : 0.30...1.40
                                                        LOWEST RATED SPEED I
                                                        Control-lever
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                         position degrees: 19...27
                                                        Setting point H/out aux. spring
                                                        Speed 1/min : 250
BASIC SETTING
                                                        Contr.-roo trav.mm: 6.0
                                                        Speed
                                                                    1/min : 250
                                                        C-rod trav.mm : 5.90...6.10
C-rod trav.mm : 2.00
1st speed
              1/mi: 850
Contr.-rod trav.mm: 11.60... 70
                                                                     1/min : 600...700
                                                        Speed
Del.quantity cm3/: 18.7...18.9
                                                        TORQUE CONTROL
                                                        Torque-control curve - 1st version
               100H.: (18.4...19.2)
                                                        1st speed
                                                                    1/min : 850
                                                          C-rod trav.mm : 11.80...11.90
Dispersion
               cm3/:0.5
                                                        2nd speed 1/min: 400
                                                        C-rod trav.mm : 11.80...12.00
3rd speed 1/min : 300
C-rod trav.mm : 12.10...12.60
               100H.: (0.9)
               1/min: 250.0
2nd speed
Contr.-rod trav. m: 6.7...6.9
Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
                                                         compensator (LDA,ADA,ALDA)
               cm3/: 0.8
100H.: (1.2)
Dispersion
                                                        1st version
                                                        Setting
                                                                     1/min : 600
                                                        Speed
                                                        Pressure hPa : 700
SLEEVE PUSITION
                                                        Contr.-rod trav.mm: 11.60...11.70
Control-lever position
             Degree: -3
1/min: 800
                                                        Measurement
Cont.-rod travelmm: 0.30...0.70
                                                                    1/min : 600
                                                        Speed
Governor-spring reload
Notch setting x : 4.75
                                                        1st pressure hPa : -
                                                        C-rod trav.mm : 10.30...10.50
2nd pressure hPa : 300
                                                        C-rod trav.mm : 11.30...11.40
3rd pressure hPa : 255
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                          C-rod trav.mm : 10.80...11.10
1st version
Speed
               1/min: 850
Charge press. hPa : 700
                                                        FUEL-DELIVERY CHARACTERISTICS
Del.quantity cm3/: 187.0...189.0
1000H:: (184.0...192.0)
Dispersion cm3/: 5.00
1000H:: (9.00)
                                                        Charge press. hPa : -
                                                        Speed 1/min : 600
                                                        Del.quantity cm3/: 140.0...142.0
1000H.: (137.0...145.0)
HIGHEST RATED SPEED
                                                        ROTATIONAL-SPEED LIMITATION
1st version
Control-lever
                                                        1st version
                                                        1mm control-rod travel less than
 position degrees: 49...57
Testing:
                                                        full-load trav.mm: 10.60
                                                                    1/min : 1135...1145
1st c-rod trav.mm : 10.60
                                                        Speed
Speed 1/min: 1135...1145
2nd c-rod trav.mm: 4.00
                                                        STARTING FUEL DELIVERY
  Speed 1/min: 1200...1230
3rd c-rod trav.mm : 4.00
  Speed 1/min: 1270...1300
                                                       Speed 1/min : 100
C27
```

Del.quantity cm3/: 305.0...345.0 1000H.: (301.0...349.0) Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min : 250
Contr.-rod trav.mm: 6.40...6.60

Remarks:

Note inst. in remarks column Test sheet : DAF 11.67 Edition : 09.03.87 Superceeded : 10.85 Calibrating oil : ISO-4113 : DAF 11,6T27 Combination no. : 0 401 876 297 Injection pump Pump designation : PE6P110A320RS385-1 EP type number : 0 411 816 146 Governor Governor design. : RSV250...750P7A507 Governer no. : 0 421 833 185 Customer-spec. information Customer : DAF Engine : DKT 1160 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values START OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 2.80...2.90 : (2.75...2.95) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-

BOSCH INJ. PUMP TEST SPECIFICATIONS

```
SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
BASIC SETTING
                 1/mi: 700
1st speed
Contr.-rod trav.mm: 12.80...13.00
Del.quantity cm3/: 16.9...17.1
                 100H.: (16.7...17.4)
                 cm3/:0.4
Dispersion
                 100H.: (0.7)
2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.8...7.0
Del.quantity cm3/: 2.5...3.3
100H.: (2.2...3.5)
                 cm3/:0.4
Dispersion
                 100H.: (0.7)
SLEEVE POSITION
Control-lever position
               Degree: -3
1/min: 800
Speed
Cont.-rod travelmm: 0.30...0.70
Governor-spring reload
Notch setting x : 4.75
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
                 1/min: 700
Speed
Del.quantity cm3/: 169.5...171.5
1000H.: (167.0...174.0)
Dispersion cm3/: 4.00
               1000H.: (7.50)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 42...50
Testing:
1st c-rod trav.mm : 11.80
$peed 1/min: 750...755
2nd c-rod trav.mm: 4.00
$peed 1/min: 780...795
4th speed 1/min: 950
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
```

002

1/min : 250 Speed Contr.-rod trav.mm: 6.9 Speed 1/min : 250 C-rod trav.mm : 6.80...7.00 C-rod trav.mm : 2.00 Speed 1/min: 275...315 SET IDLE AUXILIARY SPRING 1/min : 2.00 Speed ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 11.60 LOW IDLE Speed 1/min : 250 Contr.-rod trav.mm: 6.80...7.00 Del.quantity cm3/: 25.0...33.0 1000H: (22.5...35.5) Dispersion cm3/: 4.50

1000H.: (7.50)

Remarks:

APPLICATION Generator

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                   Cam sequence
Note inst. in remarks column
                                                   SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Test sheet
                   : DAF 11,6T29
                   : 09.03.87
Edition
Superceeded
                   : ISO-4113
                                                   BASIC SETTING
Calibrating oil
Combination no.
                   : 0 401 876 298
                                                   1st speed
                                                                 1/mi: 700
                                                   Contr.-rod trav.mm: 11.60...11.70
Injection pump
                   : PE6P120A320R$385-2
Pump designation
EP type number
                   : 0 411 826 132
                                                   Del.quantity cm3/: 22.2...22.4
Governor
                                                                 100H.: (21.9...22.7)
Governor design.
                   : RSV250...750P7A507
Governer no.
                   : 0 421 833 185
                                                   Dispersion
                                                                 cm3/: 0.5
Customer-spec. information
                                                                 100H.: (0.9)
Customer
                   : DAF
                                                                 1/min: 250.0
Engine
                   : DKX 1160
                                                   2nd speed
                                                   Contr.-rod trav. m: 4.9...5.1
                                                   Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                                 cm3/:0.8
                                                   Dispersion
                                                                 100H.: (1.2)
                   : 38...42
                                                   SLEEVE POSITION
Overflow valve
                   : 1 417 413 025
                                                   Control-lever position
                                                                Degree: -3
1/min: 800
                                                   Speed
Inlet press., bar : 1.50
                                                   Cont.-rod travelmm: 0.30...0.70
Calibrating nozzle-holder
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
                : 1 688 901 019
 assembly
                                                   1st version
Opening
                   : 207...210
                                                   Speed
                                                                 1/min: 700
 pressure, bar
                                                   Del.quantity cm3/: 222.5...224.5
                                                   1000H.: (219.5...227.5)
Dispersion cm3/: 5.00
Perforated-plate
diameter mm
                   : 0.8
                                                                1G00H.: (9.00)
Test inj. tubing : 1 680 750 067
                                                   HIGHEST RATED SPEED
                                                   1st version
                                                   Control-lever
Outside diameter
                                                    position degrees: 43...51
x Wall thickness
                   : 6.00x1.50x1000
x Length mm
                                                   Testing:
                                                   1st c-rod trav.mm: 10.60
(A) Injection pump setting values
                                                     Speed 1/min: 750...755
    Insp. values in parentheses
                                                   2nd c-rod trav.mm: 4.00
    Set constant delivery quant.
                                                                1/min: 780...795
                                                     Speed
    per values
                                                                1/min : 950
                                                   4th speed
                                                     C-rod trav.mm : 0.30...1.40
START OF DELIVERY
Test pressure, bar: 25...27
                                                   LOWEST RATED SPEED I
                   : 2.80...2.90
: (2.75...2.95)
                                                   Control-lever
Prestroke mm
                                                    position degrees: 19...27
Contr.-rod trav.mm: 9.00...12.00
                                                   Setting point w/out aux. spring
003
```

Speed 1/min: 250 Contr.-rod trav.mm: 5.0 Speed 1/min: 250 : 4.90...5.10 : 2.00 C-rod trav.mm C-rod trav.mm 1/min : 250...290 Speed SET IDLE AUXILIARY SPRING Speed 1/min : 2.00 ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than fuil-load trav.mm: 10.60 LOW IDLE Remarks: **APPLICATION**

Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
Note inst. in remarks column
                    : DAF 8,3 012
: 27.03.87
Test sheet
                                                       BASIC SETTING
Edition
Superceeded : 10.85
Calibrating oil : 180-4113
                                                                      1/mi: 700
                                                       1st speed
                                                       Contr.-rod trav.mm: 12.70...12.80
Combination no.
                    : 0 401 876 299
                                                       Del.quantity cm3/: 14.2...14.4
Injection pump
Pump designation : PE6P100A72ORS447-1
                                                                     100H.: (14.0...14.6)
EP type number
                    : 0 411 806 195
                                                       Dispersion
                                                                     cm3/:0.3
Governor
Governor design. : RSV250...750P7A507-1
Governer no. : 0 421 833 200
                                                                     100H.: (0.6)
Customer-spec. information
                                                                     1/min: 250.0
                                                       2nd speed
                                                      Contr.-rod trav. m: 5.3...5.5

Del.quantity cm3/: 0.9...1.3

100H.: (0.6...1.5)

Dispersion cm3/: 0.3

100H.: (0.5)
Customer
                   : DAF
Engine
                    : DHT 825
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                       SLEEVE POSITION
                    : 38...42
                                                       Control-lever position
                                                                    Degree: -3
Overflow valve
                                                                     17min: 800
                    : 1 417 413 025
                                                       Cont.-rod travelmm: 0.30...0.70
Inlet press., bar : 1.50
                                                       Governor-spring reload
                                                       Notch setting x : 4.75
Calibrating nozzle-holder
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
              : 0 681 343 009
 assembly
Opening
                                                       1st version
 pressure, bar : 172...175
                                                                     1/min: 700
                                                       Speed
                                                       Del.quantity cm3/: 142.0...144.0
                                                                    1000H.: (140.0...146.0)
cm3/ : 3.50
1000H.: (6.00)
Test inj. tubing : 1 680 750 015
                                                       Dispersion
Outside diameter
x Wall thickness
                                                       HIGHEST RATED SPEED
               : 6.00x1.50x600
x Length mm
                                                       1st version
                                                       Control-lever
(A) Injection pump setting values
                                                       position degrees: 42...50
    Insp. values in parentheses
Set constant delivery quant.
                                                       Testing:
    per values
                                                       1st c-rod trav.mm : 11.70
                                                         Speed 1/min: 750...755
                                                       2nd c-rod trav.mm : 4.00
Speed 1/min : 780...795
START OF DELIVERY
Test pressure, bar: 25...27
                                                       4th speed 1/min: 950
                    : 3.20...3.30
                                                         C-rod trav.mm : 0.30...1.40
Prestroke mm
                    : (3.15...3.35)
                                                      LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4
                                                      Control-lever
                                                       position degrees: 17...25
                                                       Setting point w/out aux. spring
005
```

```
Speed 1/min: 250
Contr.-rod trav.mm: 5.4
Speed 1/min: 250
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.00
Speed 1/min: 250...290

SET IDLE AUXILIARY SPRING
Speed 1/min: 2.00

STARTING FUEL DELIVERY

Speed 1/min: 100

LOW IDLE

Speed 1/min: 250
Contr.-rod trav.mm: 5.30...5.50
Del.quantity cm3/: 9.0...13.0
1000H.: (6.5...15.5)
Dispersion cm3/: 3.50
1000H.: (5.50)
```

Remarks:

APPLICATION Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
Test sheet
                   : DAF 11,6 U6
                                                      BASIC SETTING
                   : 27.03.87
Edition
Superceeded
                   : 10.85
                                                                      1/mi: 700
                                                      1st speed
                 : ISO-4113
Calibrating oil
                                                      Contr.-rod trav.mm: 11.60...11.70
                   : 0 401 876 300
Combination no.
                                                      Del.quantity cm3/: 14.2...14.4
Injection pump
Pump designation
                   : PE6P110A720RS441-1
                                                                     100H.: (13.9...14.6)
EP type number
                   : 0 411 816 153
Governor
                                                      Dispersion
                                                                    cm3/:0.4
Governor design. : RSV250...750P7A507-1
Governer no. : 0 421 833 200
                                                                     100H.: (0.7)
                                                                    1/min: 250.0
Customer-spec. information
                                                      2nd speed
                                                      Contr.-rod trav. m: 4.8...5.0
Customer
                   : DAF
                                                      Del.quantity cm3/: 0.9...1.3
100H.: (0.6...1.5)
                    : DHS 825
Engine
                                                                    cm3/: 0.4
100H.: (0.7)
                                                      Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                   Degree: -3
1/min: 800
Overflow valve
                    : 1 417 413 025
                                                      Cont.-rod travelmm: 0.30...0.70
Inlet press., bar: 1.50
                                                      Governor-spring reload
                                                      Notch setting x : 5.00
Calibrating nozzle-holder
                   : 0 681 343 009
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                      1st version
 pressure, bar
                   : 172...175
                                                                    1/min: 700
                                                      Speed
                                                      Del.quantity cm3/: 142.0...144.0
1000H.: (139.5...146.5)
Dispersion cm3/: 4.00
Test inj. tubing : 1 680 750 015
                                                                   1000H.: (7.50)
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
                    : 6.00X1.50X600
x Length mm
                                                      1st version
                                                      Control-lever
(A) Injection pump setting values
                                                       position degrees: 43...51
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
                                                      1st c-rod trav.mm : 10.60
Speed 1/min : 750...755
    per values
                                                      2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                                  1/min: 780...795
Test pressure, bar: 25...27
                                                                   1/min : 950
                                                      4th speed
                                                        C-rod trav.mm : 0.30...1.40
Prestroke mm
                    : 2.80...2.90
                    : (2.75...2.95)
Contr.-rod trav.mm: 9.00...12.00
                                                      LOWEST RATED SPEED I
Cam sequence : 1- 5- 3- 6- 2- 4
                                                      Control-lever
                                                       position degrees: 19...27
                                                      Setting point w/out aux. spring
```

Speed 1/min : 250 Contr.-rod trav.mm: 4.9 Speed 1/min : 250 mm : 4.80...5.00 mm : 2.00 1/min : 250...290 C-rod trav.mm C-rod trav.mm Speed SET IDLE AUXILIARY SPRING Speed 1/min : 2.00 ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 10.40 STARTING FUEL DELIVERY Speed 1/min : 100 LOW IDLE 1/min : 250 Speed Contr.-rod trav.mm: 4.80...5.00 Del.quantity cm3/: 9.0...13.0 1000H.: (6.5...15.5) Dispersion cm3/: 4.50 1000H.: (7.50) Remarks: **APPLICATION** Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        $\tilde{v}$ ang. spacing $^0$CS: 0-60-120-180-240-300 Tolerance + - $^0$CS: 0.50 (0.75)
Note inst. in remarks column
                    : DAF 11,6 W1
Test sheet
                                                        BASIC SETTING
Edition
                     : 09.03.87
Superceeded
                                                        1st speed
                                                                       1/mi: 600
Calibrating oil
                    : ISO-4113
                                                        Contr.-rod trav.mm: 11.50...11.60
Combination no.
                    : 0 401 876 303
                                                        Del.quantity cm3/: 11.0...11.2
Injection pump
                                                                       100H.: (10.8...11.4)
Pump designation
                    : PE6P100A320R$384-1
EP type number
                    : 0 411 806 189
                                                                       cm3/:0.3
Governor
                                                        Dispersion
Governor design. : RSV250...1100P5A510
Governer no.
                    : 0 421 833 191
                                                                       100H.: (0.6)
                                                       2nd speed 1/min: 250.0

Contr.-rod trav. m: 7.2...7.4

Del.quantity cm3/: 1.2...1.6

100H.: (0.9...1.8)

Dispersion cm3/: 0.3
Customer-spec. information
Customer
                    : DAF
Engine
                    : DK 1160V
TEST BENCH REQUIREMENTS
                                                                       100H.: (0.5)
Calibrating-oil inlet temp. °C
                                                        SLEEVE POSITION
                     : 38...42
                                                        Control-lever position
                                                                     Degree: -3
1/min: 800
Overflow valve
                     : 1 417 413 025
                                                        Cont.-rod travelmm: 0.30...0.70
Inlet press., bar: 1.50
                                                        Governor-spring reload
                                                        Notch setting x : 4.25
Calibrating nozzle-holder
                   : 0 681 343 009
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                        1st version
 pressure, bar : 172...175
                                                                      1/min: 600
                                                        Speed
                                                        Del.quantity cm3/: 110.5...112.5
1000H.: (108.5...114.5)
Dispersion cm3/: 3.50
1000H.: (6.00)
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
                                                        HIGHEST RATED SPEED
                    : 6.00x1.50x600
                                                        1st version
x Length mm
                                                        Control-lever
(A) Injection pump setting values
                                                         position degrees: 46...54
    Insp. values in parentheses
Set constant delivery quant.
                                                        Testing:
    per values
                                                        1st c-rod trav.mm: 9.80
                                                                  1/min : 1125...1135
                                                          Speed
START OF DELIVERY
                                                        2nd c-rod trav.mm : 4.00
                                                                     1/min: 1175...1205
                                                          Speed
Test pressure, bar: 25...27
                                                        3rd c-rod trav.mm: 4.00
                                                                     1/min: 1260...1290
                                                          Speed
Prestroke mm
                    : 3.20...3.30
                    : (3,15...3.35)
                                                                     1/min : 1400
                                                        4th speed
                                                          C-rod trav.mm : 0.30...1.40
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5- 3- 6-
                                                       LOWEST RATED SPEED I
                                                        Control-lever
009
```

```
position degrees: 17...25
Setting point w/out aux. spring
             1/min : 250
Speed
Contr.-rod trav.mm: 6.8
             1/min : 250
nm : 7.20...7.40
Speed
C-rod trav.mm
                    : 2.00
C-rod trav.mm
             1/min: 700...760
Speed
TORQUE CONTROL
Torque-control curve - 1st version
             1/min : 1050
1st speed
                  : 10.80...11.00
  C-rod trav.mm
             1/min : 600
2nd speed
  C-rod trav.mm : 11.50...11.60
3rd speed
            1/min : 825
  C-rod trav.mm : 11.20...11.40
4th speed 1/min: 900
  C-rod trav.mm : 11.10...11.40
FUEL-DELIVERY CHARACTERISTICS
             1/min : 1050
Speed
Del.quantity cm3/: 107.0...111.0
1000H.: (104.5...113.5)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 9.80
            1/min : 1125...1135
Speed
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 195.0...235.0
1000H.: (191.0...239.0)
Contr.-rod trav.mm: 19.50...21.00
LOW IDLE
             1/min : 250
Speed
Contr.-rod trav.mm: 7.20...7.40
Del, quantity cm3/: 12.0...16.0
1000H.: (9.5...18.5)
Dispersion cm3/: 3.50
             1000H.: (5.50)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                   : DAF 11.6K18
: 03.04.87
                                                      SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : 12.9.86
Calibrating oil : ISO-4113
                                                      BASIC SETTING
Combination no.
                   : 0 401 876 308
                                                       1st speed
                                                                      1/mi: 850
Injection pump
Pump designation : PE6P110A320R$372-1
EP type number : 0 411 816 145
                                                      Contr.-rod trav.mm: 12.00...12.10
                                                      Del.quantity cm3/: 13.7...13.9
Governor
Governor design. : RSV250...1100P5A508-
                                                                     100H.: (13.4...14.1)
Governer no. : 0 421 833 192
                                                                     cm3/:0.4
                                                      Dispersion
Customer-spec. information
                                                                     100H.: (0.7)
Customer
Engine
                    : DKTD 1160
                                                                     1/min: 250.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.6...6.8
Del.quantity cm3/: 0.7...1.2
1st version kW : 191.0
                                                                     100H.: (0.4...1.4)
Speed
               1/min: 2200
                                                                     cm3/: 0.4
                                                      Dispersion
                                                                     100H.: (0.7)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                    Degree: -3
1/min: 800
Overflow valve
                    : 1 417 413 025
                                                      Cont.-rod travelmm: 0.30...0.70
Inlet press., bar: 1.50
                                                      Governor-spring reload
                                                      Notch setting x : 4.25
Calibrating nozzle-holder
             : 0 681 343 009
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                      1st version
 pressure, bar : 172...175
                                                                     1/min: 850
                                                      Speed
                                                      Charge press. hPa: 700
                                                      Del.quantity cm3/: 137.0...139.0
1000H.: (134.5...141.5)
Dispersion cm3/: 4.00
1000H.: (7.50)
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
                   : 6.00x1.50x600
                                                      HIGHEST RATED SPEED
x Length mm
                                                      1st version
                                                      Control-lever
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       position degrees: 47...55
    per values
                                                      Testing:
                                                      1st c-rod trav.mm : 11.00
                                                         Speed 1/min: 1140...1150
START OF DELIVERY
                                                      2nd c-rod trav.mm : 4.00
Test pressure, bar: 25...27
                                                                 1/min : 1200...1230
                                                         Speed
                   : 2.80...2.90
                                                      3rd c-rod trav.mm : 4.00
Prestroke mm
                    : (2.75...2.95)
                                                        Speed 1/min: 1275...1305
011
```

4th speed 1/min: 1425 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Setting point w/out aux. spring 1/min : 250 Speed Contr.-rod trav.mm: 6.2 1/min : 250 Speed C-rod trav.mm : 6.10...6.30 C-rod trav.mm : 2.00 1/min : 610...710 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 850 C-rod trav.mm : 12.20...12.30 2nd speed 1/min: 400 C-rod trav.mm : 12.20...12.40 3rd speed 1/min : 300 C-rod trav.mm : 12.50...13.90 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 600 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.00...12.10 Measurement 1/min : 600 Speed 1st pressure hPa : -C-rod trav.mm : 11.40...11.60 2nd pressure hPa : 300 C-rod trav.mm : 11.80...11.90 3rd pressure hPa : 260 C-rod trav.mm : 11.50...11.70 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 128.0...130.0 1000H.: (125.5...132.5) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 11.00 1/min : 1140...1150 Speed STARTING FUEL DELIVERY Speed 1/min : 100

D12

Del.quantity cm3/: 245.0...285.0 1000H.: (241.0...289.0) Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 6.60...6.80 Del.quantity cm3/: 7.0...12.0 1000H.: (4.5...14.5) Dispersion cm3/: 4.50

1000H.: (7.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11,6016 Edition : 09.03.87 Superceeded : -

Calibrating oil : ISO-4113

Combination no. : 0 401 876 309

Injection pump

Pump designation : PE6P12OA32ORS415-1 EP type number : 0 411 826 123

Governor

Governor design. : RSV250...900P5A508

Governer no. : 0 421 833 193

Customer-spec. information Customer : DAF

Engine : DKS-E1160

1st version kW : 206.0 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00X1.50X1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values ____

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                    : 2.80...2.90
                                                      3rd c-rod trav.mm : 4.00
                    : (2.75...2.95)
                                                        Speed 1/min: 1025...1055
Contr.-rod trav.mm: 9.00...12.00
                                                      4th speed 1/min: 1200
Cam sequence : 1-5-3-6-2-4
                                                        C-rod trav.mm : 0.30...1.40
                                                      LOWEST RATED SPEED I
                                                      Control-lever
SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0.50 (0.75)
                                                       position degrees: 20...28
                                                      Setting point w/out aux. spring
                                                                  1/min : 250
BASIC SETTING
                                                      Contr.-rod trav.mm: 6.3
                                                      Speed
                                                                  1/min : 250
                                                      C-rod trav.mm : 6.20...6.40
C-rod trav.mm : 2.00
Speed 1/min : 395...455
               1/mi: 650
1st speed
Contr.-rod trav.mm: 11.90...12.00
Del.quantity cm3/: 18.4...18.6
                                                      TORQUE CONTROL
                                                      Torque-control curve - 1st version
              100H.: (18.1...18.9)
                                                      1st speed 1/min: 650
                                                        C-rod trav.mm : 12.10...12.20
Dispersion
              cm3/:0.5
                                                      2nd speed 1/min: 690
                                                        C-rod trav.mm : 11.70...11.90
                                                      3rd speed 1/min : 900
              100H.: (0.9)
                                                        C-rod tray.mm : 11.30...11.50
              1/min: 250.0
2nd speed
Contr.-rod trav. m: 6.7...6.9
                                                       compensator (LDA, ADA, ALDA)
Del.quantity cm3/: 1.9...2.3
              100H.: (1.6...2.6)
cm3/: 0.8
100H.: (1.2)
Dispersion
                                                      1st version
                                                      Setting
                                                                   1/min: 600
                                                      Speed
SLEEVE POSITION
                                                      Pressure hPa : 700
                                                      Contr.-rod trav.mm: 11.90...12.00
Control-lever position
             Degree: -3
1/min: 800
                                                      Measurement
                                                                   1/min : 600
Cont.-rod travelmm: 0.30...0.70
                                                      Speed
Governor-spring reload Notch setting x : 5.00
                                                      1st pressure hPa : -
                                                        C-rod trav.mm
                                                                         : 9.80...9.90
                                                      2nd pressure hPa : 265
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                        C-rod trav.mm
                                                                          : 11.40...11.50
                                                      3rd pressure hPa : 120
                                                        C-rod trav.mm
                                                                          : 10.00...10.60
1st version
Speed
              1/min: 650
Charge press, hPa : 700
                                                      FUEL-DELIVERY CHARACTERISTICS
Del.quantity cm3/: 184.5...186.5
1000H.: (181.5...189.5)
Dispersion cm3/: 5.00
1000H.: (9.00)
                                                      1st version
                                                      Charge press. hPa: 700
                                                                   1/min: 900
                                                      Del.quantity cm3/: 181.5...185.5
1000H.: (178.5...188.5)
HIGHEST RATED SPEED
1st version
Control-lever
                                                      Charge press. hPa : -
 position degrees: 42...50
                                                      Speed
                                                                   1/min : 600
                                                      Del.quantity cm3/: 129.5...131.5
1000H.: (126.5...134.5)
Testing:
1st c-rod trav.mm : 10.40
  Speed 1/min: 940...950
                                                      ROTATIONAL-SPEED LIMITATION
2nd c-rod trav.mm: 4.00
  Speed
           1/min : 1010...1040
                                                      1st version
D14
```

```
1mm control-rod travel less than
full-load trav.mm: 10.40
Speed 1/min: 940...950
Speed
STARTING FUEL DELIVERY
LOW IDLE
Speed
              1/min : 250
Contr.-rod trav.mm: 6.70...6.90
Del.quantity cm3/: 19.0...23.0
1000H.: (16.0...26.0)
Dispersion cm3/: 8.00
1000H.: (12.00)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : IFS 23,1 A : 19.12.86

Calibrating oil : ISO-4113

Combination no. : 0 401 876 318

Injection pump

Pump designation : PE6P130A320RS496 EP type number : 0 411 836 042

Governor

Governor design. : RSV350...1500POA514

Governer no. : 0 421 833 201

Customer-spec. information

: ISOTTA-FRASCHINI Customer

Engine : ID38 SS-6V

1st version kW : 330.0 Speed 1/min: 3000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                       : 3.50...3.60
                       : (3.45...3.65)
Contr.-rod trav.mm: 18.00...21.00
Cam sequence : 1- 2- 3- 4- 5- 6
SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
SD mark cyl. no. : 1
BASIC SETTING
1st speed
                1/mi: 1500
Contr.-rod trav.mm: 10.00...10.10
Del.quantity cm3/: 25.7...26.0
                 100H.: (25.3...26.3)
Dispersion
                cm3/:0.6
                 100H.: (1.0)
                1/min: 350.0
2nd speed
Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/: 2.0...2.6
100H.: (1.6...3.0)
Dispersion cm3/: 1.0
100H.: (1.4)
SLEEVE POSITION
Control-lever position
               Degree: -3
                17min: 800
Speed
Cont.-rod travelmm: 0.30...0.70
Governor-spring reload
Notch setting x : 2.25
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
Speed 1/min: 1500
Del.quantity cm3/: 257.0...260.0
1000H.: (253.5...263.5)
Dispersion cm3/: 6.00
               1000H.: (10.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 42...50
Testing:
1st c-rod trav.mm : 9.00
  Speed 1/min: 1540...1550
2nd c-rod trav.mm : 4.00
D17
```

Speed 1/min : 1600...1630 4th speed 1/min: 1700 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Setting point w/out aux. spring 1/min : 350 Contr.-rod trav.mm: 4.5 1/min : 350 Speed C-rod trav.mm : 4.90...5.10 C-rod trav.mm : 2.00 1/min : 435...495 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 400 C-rod trav.mm : 11.20...11.80 ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 9.00 Speed 1/min : 1540...1550

Remarks:

APPLICATION Navy

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
                    : PEN 6,1 Q
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : 05.06.87
Edition
Superceeded
                   : ISO-4113
Calibrating oil
                                                      SD mark cyl. no. : 1
Combination no.
                    : 0 401 876 327
                                                      BASIC SETTING
Injection pump
Pump designation : PE6P110A320RS499
                                                      1st speed 1/mi: 1000
EP type number
                    : 0 411 816 169
                                                      Contr.-rod trav.mm: 10.80...10.90
Governor
                   : RSV325...1400P2A374-
Governor design.
                                                      Del.quantity cm3/: 11.4...11.6
Governer no.
                    : 0 421 833 220
                                                                     100H.: (11.1...11.9)
Customer-spec. information
                   : VOLVO-PENTA
Customer
                                                      Dispersion
                                                                    cm3/:0.4
Engine
                    : TAMD61A
                                                                     100H.: (0.7)
                                                      2nd speed 1/min: 325.0
Contr.-rod trav. m: 4.1...4.3
Del.quantity cm3/: 1.1...1.5
1st version kW : 220.0
              1/min: 2800
Speed
                                                                    cm3/: 0.3
100H.: (0.6)
TEST BENCH REQUIREMENTS
                                                      Dispersion
Calibrating-oil inlet temp. OC
                    : 38...42
                                                      SLEEVE POSITION
                                                      Control-lever position
Overflow valve
                                                                   Degree: -3
                    : 1 417 413 025
                                                      Speed
                                                                    17min: 800
                                                      Cont.-rod travelmm: 0.30...0.70
Inlet press., bar : 1.50
                                                      Governor-spring reload Notch setting x : 3.00
Calibrating nozzle-holder
           : 0 681 343 009
 assembly
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar
                   : 172...175
                                                      1st version
                                                                    1/min: 1000
                                                      Speed
                                                     Charge press. hPa: 900
Del.quantity cm3/: 114.0...116.0
1000H.: (111.0...119.0)
Dispersion cm3/: 4.00
Test inj. tubing : 1 680 750 015
Outside diameter
                                                                   1000H.: (7.50)
x Wall thickness
                    : 6.00X1,50X600
x Length mm
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
                                                      1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                      Control-lever
                                                       position degrees: 47...55
    per values
                                                      Testing:
START OF DELIVERY
                                                      1st c-rod trav.mm : 9.80
                                                        Speed 1/min: 1420...1430
Test pressure, bar: 25...27
                                                      2nd c-rod trav.mm : 4.00
                                                        Speed 1/min: 1455...1485
Prestroke mm
                    : 2.50...2.60
                                                                   1/min: 1620
                    : (2.45...2.65)
                                                      4th speed
D18
```

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 13...21 Setting point w/out aux. spring 1/min : 325 Speed Contr.-rod trav.mm: 3.7 Speed 1/min : 325 : 4.10...4.30 C-rod trav.mm : 2.00 C-rod trav.mm 1/min : 380...440 Speed TORQUE CONTROL Dimension a mm : 1400 1 Torque-control curve - 1st version 1st speed 1/min : 1.10. : ..11.20 0 C-rod trav.mm C-rod trav.mm 600 1 .0.00 3rd speed 1/min : 1.10. C-rod trav.mm : ..11.40 0 C-rod trav.mm 375 1 : .0.00 5th speed 1/min: 1.55. C-rod trav.mm : ..11.65 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 10.80...10.90 Measurement 1/min : 500 Speed 1st pressure hPa : -: 8.10...8.30 C-rod trav.mm 2nd pressure hPa : 550 C-rod trav.mm : 10.50...10.60 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 1400 Del.quantity cm3/: 116.0...122.0 1000H.: (115.0...125.0) Charge press. hPa : -Speed 1/min: 500 Del.quantity cm3/: 48.0...52.0 1000H.: (45.0...55.0) ROTATIONAL-SPEED LIMITATION 1st version

D19

1mm control-rod travel less than
full-load trav.mm: 9.80
Speed 1/min: 1420...1430
STARTING FUEL DELIVERY

1/min : 100

Del.quantity cm3/: 135.0...165.0

LOW IDLE

Speed 1/min: 325
Contr.-rod trav.mm: 4.10...4.30
Del.quantity cm3/: 11.0...15.0
Dispersion cm3/: 3.00

1000H.: (6.00)

APPLICATION Navy

Speed

```
: 1-2-3-4-5-6
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence
Note inst. in remarks column
                                                     SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
                   : IFS 23,1 A1
Test sheet
                    : 09.03.87
Edition
Superceeded
Calibrating oil
                   : ISO-4113
                                                     SD mark cyl. no. : 1
Combination no.
                   : 0 401 876 330
                                                     BASIC SETTING
Injection pump
                                                     1st speed
                                                                    1/mi: 1500
Pump designation : PE6P130A3208496-1
                   : 0 411 836 043
EP type number
                                                     Contr.-rod trav.mm: 10.00...10.10
Governor
Governor design. : RSV350...1500P0A524
                                                     Del.quantity cm3/: 25.7...26.0
Governer no.
                   : 0 421 833 256
                                                                   100H.: (25.3...26.3)
Customer-spec. information
Customer
                   : ISOTTA-FRASCHINI
                                                     Dispersion
                                                                   cm3/:0.6
Engine
                   : ID38 SS-6V
                                                                   100H.: (1.0)
TEST BENCH REQUIREMENTS
                                                                   1/min: 350.0
                                                     2nd speed
                                                     Contr.-rod trav. m: 4.9...5.1
                                                     Del.quantity cm3/: 2.0...2.6
100H.: (1.6...3.0)
Dispersion cm3/: 1.0
100H.: (1.4)
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                    : 1 417 413 025
                                                     SLEEVE POSITION
                                                     Control-lever position
Inlet press., bar : 1.50
                                                                  Degree: -3
                                                                   17min: 800
Calibrating nozzle-holder
                                                     Speed
                                                     Cont.-rod travelmm: 0.30...0.70
               : 1 688 901 019
 assembly
Opening
                                                     Governor-spring reload
                   : 207...210
                                                     Notch setting x : 2.25
 pressure, bar
Perforated-plate
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 0,8
 diameter mm
                                                     1st version
                                                     Speed
                                                                   1/min: 1500
                                                     Charge press. hPa: 900
Del.quantity cm3/: 257.0...260.0
1000H.: (253.5...263.5)
Test inj. tubing
                   : 1 680 750 067
Outside diameter
x Wall thickness
                                                     Dispersion cm3/ : 6.00
                  : 6.00x1.50x1000
                                                                  1000H.: (10.00)
x Length mm
(A) Injection pump setting values
                                                     HIGHEST RATED SPEED
    Insp. values in parentheses
Set constant delivery quant.
                                                     1st version
                                                     Control-lever
    per values
                                                      position degrees: 42...50
START OF DELIVERY
                                                     Testing:
Test pressure, bar: 25...27
                                                     1st c-rod trav.mm: 9.00
                                                                 1/min: 1540...1550
                                                       Speed
                                                     2nd c-rod trav.mm : 4.00
                   : 3.50...3.60
Prestroke mm
                   : (3.45...3.65)
                                                       Speed 1/min: 1600...1630
Contr.-rod trav.mm: 18.00...21.00
                                                                  1/min: 1700
                                                     4th speed
D20
```

```
C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 16...24
Setting point w/out aux. spring
           1/min : 350
Contr.-rod trav.mm: 4.5
            1/min : 350
Speed
C-rod trav.mm
                : 4.40...4.60
                : 2.00
C-rod trav.mm
           1/min : 435...495
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 1500
1st speed
  C-rod trav.mm : 10.00...10.10
2nd speed 1/min: 600
  C-rod trav.mm : 10.00...10.20
3rd speed 1/min: 400
  C-rod trav.mm : 11.20...11.80
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 600
Speed
            hPa : 900
Pressure
Contr.-rod trav.mm: 10.00...10.20
Measurement
            1/min : 600
Speed
1st pressure hPa : -
C-rod trav.mm : 9.00...9.10
2nd pressure hPa : 300
  C-rod trav.mm : 9.30...9.40
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 9.00
Speed
           1/min : 1540...1550
LOW IDLE
            1/min : 350
Speed
Contr.-rod trav.mm: 4.90...5.10
Del.quantity cm3/: 20.0...26.0
            1000H.: (16.0...30.0)
            cm3/: 10.00
1000H:: (14.00)
Dispersion
Remarks:
APPLICATION
Navy
D21
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : VOL 7,1 C 2 : 02.06.87 Calibrating oil : ISO-4113 Combination no. : 0 401 876 331 Injection pump Pump designation : PE6P110A320RS497 EP type number : 0 411 816 165 Governor : RSV200...1200P1A374-Governor design. : 0 421 833 257 Governer no. Customer-spec. information Customer : VOLVO Engine : TD71AW 1st version kW : 150.0 Speed 1/min: 2400 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ START OF DELIVERY Test pressure, bar: 25...27 : 3.00...3.10 Prestroke mm : (2.95...3.15)

4th speed 1/min: 1420 C-rod trav.mm: 0.30...1.40 Contr.-rod trav.mm: 9.80...12.00 Cam sequence : 1-5- 3- 6- 2- 4 LOWEST RATED SPEED I Control-lever \$D ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) position degrees: 21...29 Setting point w/out aux. spring Speed 1/min: 200
Contr.-rod trav.mm: 5.0
Speed 1/min: 200
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.00
Speed 1/min: 280...340 SD mark cyl. no. : 1 BASIC SETTING 1st speed 1/mi: 700 Contr.-rod trav.mm: 12.70...12.80 compensator (LDA,ADA,ALDA) Del.quantity cm3/: 13.3...13.5 1st version 100H.: (13.0...13.8) Setting 1/min : 500 Speed Pressure Dispersion cm3/:0.4hPa : 900 Contr.-rod trav.mm: 12.70...12.80 100H.: (0.7) Measurement 2nd speed 1/min: 200.0 Contr.-rod trav. m: 5.4...5.6 Del.quantity cm3/: 1.6...2.2 100H.: (-) Dispersion cm3/: 0.3 Speed 1/min: 500 1st pressure hPa : -C-rod trav.mm : 9.60...9.70 2nd pressure hPa : 720 100H.: (0.6) C-rod trav.mm : 12.50...12.60 3rd pressure hPa : 120 SLEEVE POSITION C-rod trav.mm : 9.90...10.10 Control-lever position Degree: -3 1/min: 800 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Speed 1/min : 700 Cont.-rod travelmm: 0.30...0.70 Speed Del.quantity cm3/: 80.0...82.0 1000H:: (77.0...85.0) Governor-spring reload Notch setting x : 5.25 ROTATIONAL-SPEED LIMITATION FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1mm control-rod travel less than 1st version Speed 1/min: 700 full-load trav.mm: 11.70 1/min : 1210...1220 Speed STARTING FUEL DELIVERY Speed 1/min : 100
Del.quantity cm3/ : 160.0...190.0
Contr.-rod trav.mm: 20.00...21.00 HIGHEST RATED SPEED 1st version Control-lever position degrees: 63...71 LOW IDLE Testing: Speed 1/min : 200
Contr.-rod trav.mm: 5.40...5.60
Del.quantity cm3/ : 16.0...22.0 1st c-rod trav.mm : 11.70 Speed 1/min: 1210...1220 2nd c-rod trav.mm : 4.00 1/min: 1260...1290 Speed

D23

Dispersion cm3/: 3.00 1000H.: (6.00)

Remarks:
Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      SD ang. spacing CS: 0-60-20-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
Test_sheet
                   : SCA 11,0 R7
                                                      SD mark cyl. no. : 1
Edition
                   : 24.07.87
                   : 1.85
Superceeded
                                                      BASIC SETTING
Calibrating oil : ISO-4113
                                                      1st speed
                                                                    1/mi: 1100
Combination no.
                   : 0 401 876 734
                                                      Contr.-rod trav.mm: 13.10...13.20
Injection pump
Pump designation : PE6P110A720R$3040-1
                                                      Del.quantity cm3/ : 15.6...15.8
EP type number
                   : 0 411 816 738
                                                                    100H.: (15.4...16.0)
Governor
Governor design. : RSV350...1100P1/505
                                                      Dispersion
Governer no.
                   : 0 421 833 148
                                                                    cm3/:0.6
Customer-spec. information
                                                                    100H.: (0.8)
Customer
                   : SCANIA
                                                      2nd speed 1/min: 350.0
Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/: 1.8...2.2
100H.: (-)
                    : DS 11 05
Engine
TEST BENCH REQUIREMENTS
                                                                    cm3/:0.2
                                                      Dispersion
Calibrating-oil inlet temp. °C
                                                                    100H.: (0.4)
                    : 38...42
                                                      SLEEVE POSITION
Overflow valve
                                                      Control-lever position
                    : 1 417 413 025
                                                                   Degree: -3
1/min: 800
                                                      Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                      Governor-spring reload
              : 0 681 343 009
 assembly
                                                      Notch setting x : 6.00
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                      1st version
                                                      Speed
                                                                    1/min: 1100
                                                      Del.quantity cm3/: 156.0...158.0
1000H.: (154.0...160.0)
                   : 1 680 750 015
Test inj. tubing
                                                                   cm3/ : 6.00
                                                      Dispersion
Outside diameter
x Wall thickness
                                                                   1000H.: (8.00)
                   : 6.00x1.50x600
x Length mm
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
                                                      1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                      Control-lever
                                                       position degrees: 62...70
    per values ____
                                                      Testing:
START OF DELIVERY
                                                      1st c-rod trav.mm : 12.10
                                                        Speed 1/min: 1140...1150
Test pressure, bar: 25...27
                                                      2nd c-rod trav.mm : 4.00
                                                                  1/min : 1210...1240
1/min : 1370
                    : 3.30...3.40
                                                        Speed
Prestroke mm
                    : (3.25...3.45)
                                                      4th speed
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4
                                                        C-rod trav.mm : 0.30...1.70
                                                      LOWEST RATED SPEED I
                                                      Control-lever
025
```

```
position degrees: 27...35
Setting point w/out aux. spring
Speed 1/min: 350
Contr.-rod trav.mm: 4.0
Speed 1/min: 350
C-rod trav.mm: 3.90...4.10
C-rod trav.mm: 2.00
              1/min: 440...500
Speed
FUEL-DELIVERY CHARACTERISTICS
               1/min: 700
Speed
Del.quantity cm3/: 156.5...161.5
1000H.: (154.0...164.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 12.10 peed 1/min: 1140...1150
Speed
MIDDLE RATED SPEED
Contr.-rod trav.mm: 4.00
STARTING FUEL DELIVERY
Speed     1/min : 100
Del.quantity cm3/ : 240.0...290.0
               1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
               1/min : 350
Speed
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/: 18.0...22.0
1000H.: (-)
               cm3/: 2.00
1000H.: (4.00)
Dispersion
Remarks:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION
Check and set without ROBO diaphragam
For comb. With letter index see
VDT-1-400/116.
```

Scania test specifications taken over on 1983-10-05
Start of delivery - engine: 20° before TDC
Firing sequence of engine: 1-5-3-6-2-4.

For sealing see VDT-I-400/117.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                             : 2.60...2.70
: (2.55...2.75)
                                                        Prestroke mm
Note inst. in remarks column
                                                         Contr.-rod trav.mm: 9.00...12.00
                     : VOL 12.1 E
: 09.03.87
                                                                             : 1-5-3-6-2-4
Test sheet
                                                         Cam sequence
Edition
Superceeded
Calibrating oil
                     : ISO-4113
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                     : 0 401 876 741
Combination no.
Injection pump
                                                         SD mark cyl. no. : 1
Pump designation
                     : PE6P120A320R$3153
EP type number
                     : 0 411 826 745
                                                        BASIC SETTING
Governor
Governor design.
                     : RSV200...1000P1A305-
                                                         1st speed
                                                                        1/mi: 700
                     : 0 421 833 208
                                                        Contr.-rod trav.mm: 11.50...11.60
Governer no.
Customer-spec. information
                                                        Del.quantity cm3/: 22.4...22.7
Customer
                                                                       100H.: (22.2...23.0)
                     : TJD 121 K
Engine
                                                        Dispersion
                                                                       cm3/:0.5
1st version kW : 253.0
               1/min: 2000
                                                                       100H.: (0.9)
Speed
                                                        2nd speed 1/min: 200.0

Contr.-rod trav. m: 5.6...5.8

Del.quantity cm3/: 2.3...2.9

100H.: (2.0...3.2)

Dispersion cm3/: 0.8
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                     : 38...42
Overflow valve
                                                                       100H.: (1.2)
                     : 1 417 413 025
                                                        SLEEVE POSITION
Inlet press., bar: 1.50
                                                        Control-lever position
                                                                      Degree: -3
                                                                       17min: 800
Calibrating nozzle holder
                                                        Speed
 assembly
                    : 1 688 901 019
                                                        Cont.-rod travelmm: 0.30...0.70
                                                        Governor-spring reload
Opening
                     : 207...210
                                                        Notch setting x : 6.00
 pressure, bar
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
                     : 0,8
 diameter mm
                                                        1st version
                                                        Speed
                                                                       1/min: 700
                                                        Del.quantity cm3/: 224.5...227.5
Test inj. tubing : 1 680 750 067
                                                                      1000H.: (222.0...230.0)
cm3/: 5.00
1000H.: (9.00)
Outside diameter
                                                        Dispersion
x Wall thickness
                    : 6.00x1.50x1000
x Length mm
                                                        HIGHEST RATED SPEED
(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.
                                                        1st version
                                                        Control-lever
                                                         position degrees: 56...64
    per values
                                                        Testing:
START OF DELIVERY
                                                        1st c-rod trav.mm : 10.50
                                                          Speed 1/min: 1020...1030
Test pressure, bar: 25...27
027
```

2nd c-rod trav.mm : 4.00 Speed 1/min : 1070...1100 4th speed 1/min : 1240 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 23...31 Setting point w/out aux. spring Speed 1/min: 200 Contr.-rod trav.mm: 5.2 Speed 1/min: 200 C-rod trav.mm : 5.60...5.80 C-rod trav.mm : 2.00 1/min: 260...320 Speed TORQUE CONTROL Dimension a mm : 950 1 Torque-control curve - 1st version 1st speed 1/min: 1.50. C-rod trav.mm : ..11.60 450 1 2nd speed 1/min: 1.50. C-rod trav.mm : ..11.60 250 1 3rd speed 1/min : 2.70. C-rod trav.mm : ..13.30 0 0 ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 10.50 Speed 1/min : 1020...1030 STARTING FUEL DELIVERY 1/min : 100 Speed Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: MTU 47.5 H1 : 20.10.87 Test sheet Edition Superceeded : 9.3.87 Calibrating oil : ISO-4113

Combination no. : 0 406 030 004

Injection pump

Pump designation : PE12ZWM160/120RS2012

EP type number : 0 416 060 003

Governor

Governor design. : RQUV300...1050ZWA65R Governer no. : 0 422 409 036

Customer-spec. information Customer : MTU

: 12 V 396-03 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 40...45

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 1 688 901 026 assembly

Opening

: 220...223 pressure, bar

Test inj. tubing : 1 680 750 016

Outside diameter

x Wall thickness

: 8,00X2,00X1500 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

: 2.50...2.60 Prestroke mm

: (2.45...2.65)

Contr.-rod trav.mm: 12.00

: 12-9-4-5-8-11-2-3-10 Cam sequence

-7-6-1

SD ang. spacing CS: 0-15-60-75-120-135-180-195-240-255-300-

315

Tolerance + - D : 0.50(0.75)

BASIC SETTING

1/mi: 1000 1st speed

Contr.-rod trav.mm: 18.00

Del.quantity cm3/: 63.0...64.4

100H.: (62.5...64.9)

cm3/ : 2.0Dispersion

100H:: (3.0)

1/min: 1000 2nd speed Contr.-rod trav. m: 9.00

Del.quantity cm3/: 21.2...24.0 100H.: (20.7...24.5)

cm3/:2.8Dispersion 100H.: (4.2)

1/min: 350 3rd speed Contri-rod trav.mm: 9.00

Del.quantity cm3/: 13.2...15.6

100H.: (12.7...16.1

cm3/ : 1.6 Dispersion 100H.: (2.4)

SLEEVE POSITION

Control-lever position

Degree: 79...85 17min: 1050

Speed

Cont.-rod travelmm: 18.00

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 79...85

Testing:

1st c-rod trav.mm : 18.00

Speed 1/min: 1050 2nd c-rod trav.mm: 17.00 Speed 1/min: 1055...1075

3rd c-rod trav.mm : 4.00

1/min: 1150...1210 Speed

1/min : 1250 4th speed

C-rod trav.mm : 0.00...2.00

SET IDLE CONTROL-LEVER

POSITION

1/min : 300 Speed Contr.-rod trav.mm: 8.00

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 21.9 J 1
Edition : 18.09.87
Superceeded : 21.8.87
Calibrating oil : ISO-4113

Combination no. : 0 402 670 804

Injection pump Pump designation : PE12P120A320L87813-1

EP type number : 0 412 620 811

Governor

Governor design. : RSV350...750P0A825-5 Governer no. : 0 421 833 277

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : OM 444 LA

1st version kW : 441.0 Speed 1/min: 1500

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 150...170

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test in . tubing : 1 680 750 067

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                       : 1-5-3-6-2-4
                                                    Cam sequence
Note inst. in remarks column
                                                    SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Test sheet
                   : SCA 9,0 E 3
Edition
                   : 09.03.87
Superceeded
Calibrating oil : ISO-4113
                                                    SD mark cyl. no. : 1
Combination no.
                   : 0 401 876 748
                                                    BASIC SETTING
Injection pump
                                                    1st speed
                                                                   1/mi: 700
Pump designation : PE6P120A320R$3141
EP type number
                   : 0 411 826 744
                                                    Contr.-rod tray.mm: 9.30...9.40
Governor
Governor design. : RSV350...1100P1A519
                                                    Del.quantity cm3/: 11.7...11.9
                   : 0 421 833 219
Governer no.
                                                                  100H.: (11.4...12.2)
Customer-spec. information
                   : SAAB-SCANIA
                                                                 cm3/:0.5
Customer
                                                    Dispersion
Engine
                   : DN9 01
                                                                  100H.: (0.8)
TEST BENCH REQUIREMENTS
                                                                  1/min: 350.0
                                                    2nd speed
                                                    Contr.-rod trav. m: 5.0...5.2
Calibrating-oil inlet temp. °C
                                                    Del.quantity cm3/: 1.5...1.9
                                                                  100H.: (-)
                   : 38...42
                                                                 cm3/: 0.3
100H.: (0.6)
                                                    Dispersion
Overflow valve
                   : 1 417 413 025
                                                    SLEEVE POSITION
                                                    Control-lever position
Inlet press., bar : 1.50
                                                                Degree: -3
                                                    Speed
                                                                 17min: 800
Calibrating nozzle-holder
               : 1 688 901 019
 assembly
                                                    Cont.-rod travelmm: 0.30...0.70
Opening
                                                    Governor-spring reload
                   : 207...210
                                                    Notch setting x : 6.00
 pressure, bar
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
                   : 0,8
 diameter mm
                                                    1st version
                                                                 1/min: 700
                                                    Speed
Test inj. tubing : 1 680 750 015
                                                    Del.quantity cm3/: 117.0...119.0
                                                                1000H.: (114.0...122.0)
cm3/ : 5.00
1000H.: (8.00)
Outside diameter
                                                    Dispersion
x Wall thickness
               : 6.00x1.50x600
x Length mm
                                                    HIGHEST RATED SPEED
(A) Injection pump setting values
                                                    1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                    Control-lever
                                                    position degrees: 60...68
    per values
                                                    Testing:
START OF DELIVERY
                                                    1st c-rod trav.mm : 8.30
                                                                1/min: 1140...1150
Test pressure, bar: 25...27
                                                      Speed
                                                    2nd c-rod trav.mm : 4.00
                                                                1/min: 1175...1205
Prestroke mm
                   : 5.00...5.10
                                                      Speed
                                                                1/min: 1300
                   : (4.95...5.15)
                                                    4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                     C-rod trav.mm : 0.30...1.40
E01
```

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 26...34
Setting point w/out aux. spring
            1/min : 350
Speed
Contr.-rod trav.mm: 3.9
            1/min : 350
Speed
C-rod trav.mm : 4.30...4.50
C-rod trav.mm : 2.00
            1/min : 435...495
Speed
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 8.30
Speed
            1/min : 1140...1150
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 290.0...340.0
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
             1/min : 350
Speed
Contr.-rod trav.mm: 4.30...4.50
Remarks:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION
Check and set without ROBO diaphragam
For comb. with letter index see VDT-I-400/116.
For sealing see VDT-I-400/117.
Test specifications approved by Scania
1987-01-08
E02
```

Engine start of delivery: 18° BTDC

Firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      START OF DELIVERY
Note inst. in remarks column
                                                      Test pressure, bar: 25...27
Test sheet
                                                                          : 4.00...4.10
                    : MB 11,0 Q 7
                                                      Prestroke mm
                    : 21.08.87
                                                                          : (3.95...4.15)
Edition
Superceeded
                   : 12.9.86
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                                          : 6- 3- 5- 2-
Calibrating oil
                  : ISO-4113
                                                      Cam sequence
                                                                                            4-
Combination no.
                    : 0 401 876 753
                                                      SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation : PE6P120A320L83815-10
EP type number
                    : 0 411 826 735
Governor
                                                      SD mark cyl. no. : 6
                    : RSV750...1150P1A820-
Governor design.
                                                      BASIC SETTING
                    : 0 421 833 227
Governer no.
                                                      1st speed 1/mi: 1180
Customer-spec. information
                                                      Contr.-rod trav.mm: 10.70...10.80
Customer
                   : DAIMLER-BENZ
Engine
                    : 0M421A
                                                      Del.quantity cm3/: 15.8...16.0
1st version kW : 184.0
                                                                    100H.: (15.5...16.3)
              1/min: 2300
Speed
                                                      Dispersion
                                                                    cm3/: 0.5
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.9)
Calibrating-oil inlet temp. °C
                                                      2nd speed 1/min: 750.0
Contr.-rod trav. m: 3.4...3.6
Del.quantity cm3/: 1.8...2.4
                    : 38...42
Overflow valve
                                                                    100H.: (1.5...2.7) cm3/: 0.8
                    : 1 417 413 025
                                                      Dispersion
                                                                     100H.: (1.2)
Inlet press., bar : 1.50
                                                      SLEEVE POSITION
Over flow
 quantity min. 1/h: 100...120
                                                      Control-lever position
                                                                   Degree: -3
1/min: 800
Calibrating nozzle-holder
                                                      Speed
                   : 1 688 901 019
                                                      Cont.-rod travelmm: 0.30...0.70
 assembly
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                    : 207...210
pressure, bar
                                                      1st version
                                                     Speed 1/min: 1180
Del.quantity cm3/: 158.0...160.0
1000H.: (155.0...163.0)
Dispersion cm3/: 5.00
Perforated-plate
diameter mm
                    : 0,8
                                                                   1000H.: (9.00)
                   : 1 680 750 067
Test inj. tubing
Outside diameter
                                                      HIGHEST RATED SPEED
x Wall thickness
                                                      1st version
                   : 6.00x1.50x1000
                                                      Control-lever
x Length mm
                                                       position degrees: 56...64
(A) Injection pump setting values
    Insp. values in parentheses
                                                      Testing:
    Set constant delivery quant.
                                                      1st c-rod trav.mm: 9.70
    per values
                                                        Speed
                                                                  1/min : 1210...1220
E03
```

2nd c-rod trav.mm : 4.00 1/min: 1240...1260 Speed 4th speed 1/min: 1350 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 32...40 Setting point w/out aux. spring 1/min : 750 Speed Contr.-rod trav.mm: 3.4
Speed 1/min: 750
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00 Speed 1/min: 755...815 SET IDLE AUXILIARY SPRING Speed 1/min : 2.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1180 C-rod trav.mm: 10.70...10.80 2nd speed 1/min: 950 C-rod trav.mm : 11.20...11.40 3rd speed 1/min : 1075 C-rod trav.mm : 11.00...11.20 SWITCH-OVER POINT Speed $1/\min : 5 (0)$ FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 975 Del.quantity cm3/: 169.0...173.0 1000H.: (166.0...176.0) Dispersion cm3/: 8.00 1000H.: (12.0) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 9.70 1/min : 1210...1220 Speed STARTING FUEL DELIVERY Speed 1/min : 100 Del.quantity cm3/: 150.0...170.0 1000H.: (146.0...174.0) Remarks:

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 2.40...2.50
                                                     Prestroke mm
                                                                         : (2.35...2.55)
Note inst. in remarks column
                                                     Contr.-rod trav.mm: 9.00...12.00
                                                     Cam sequence : 1-5-3-6-2-4
Test sheet
                   : PEN 12,0 H
                   : 05.06.87
Edition
Superceeded
                                                     SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - ^{\circ}: 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 876 755
                                                     SD mark cyl. no. : 1
Injection pump
Pump designation : PE6P12DA32DRS3187
                                                     BASIC SETTING
EP type number : 0 411 826 757
Governor
                                                                   1/mi: 700
                                                     1st speed
Governor design. : RSV250..1100P4A523
                                                     Contra-rod trav.mm: 12.50...12.60
Governer no.
                  : 0 421 833 272
                                                     Del.quantity cm3/: 21.1...21.4
Customer-spec. information
                   : VOLVO-PENTA
Customer
                                                                   100H.: (20.8...21.7)
                   : TD120G
Engine
                                                                   cm3/:0.5
                                                     Dispersion
1st version kW : 256.0
Speed
             1/min: 2200
                                                                   100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                     2nd speed
                                                                   1/min: 250.0
                                                     Contr.-rod trav. m: 4.7...4.9
Del.quantity cm3/: 2.5...2.9
100H.: (2.2...3.2)
Dispersion cm3/: 0.5
100H.: (0.7)
Calibrating-pil inlet temp. °C
                   : 38 ... 42
Overflow valve
                   : 1 417 413 025
                                                     SLEEVE POSITION
                                                     Control-lever position
Inlet press., bar : 1.50
                                                                  Degree: -3
                                                                   17min: 800
Calibrating nozzle-holder
                : 1 688 901 019
                                                     Cont.-rod travelmm: 0.30...0.70
 assembly
Opening
                                                     Governor-spring reload
                                                     Notch setting x : 5.00
 pressure, bar
                   : 207...210
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
                   : 0,8
 diameter mm
                                                     1st version
                                                                   1/min: 700
                                                     Speed
                                                     Charge press. hPa: 900
Del.quantity cm3/: 211.0...214.0
1000H.: (208.0...217.0)
Test inj. tubing : 1 680 750 067
Outside diameter
                                                     Dispersion cm3/ : 5.00
x Wall thickness
                                                                  1000H.: (9.00)
                   : 6.00x1.50x1000
x Length mm
                                                     HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
                                                     1st version
    Set constant delivery quant.
                                                     Control-lever
                                                      position degrees: 56...64
    per values
START OF DELIVERY
                                                     Testing:
                                                     1st c-rod trav.mm: 11.50
Test pressure, bar: 25...27
                                                       Speed 1/min: 1120...1130
E05
```

```
2nd c-rod trav.mm : 4.00
          1/min : 1165...1195
1/min : 1330
 Speed
4th speed
  C-rod tray.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 21...29
Setting point w/out aux. spring
            1/min : 250
Speed
Contr.-rod trav.mm: 4.3
Speed
            1/min : 250
C-rod trav.mm
                   : 4.70...4.90
                   : 2.00
C-rod trav.mm
            1/min : 295...355
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
hPa : 900
Speed
Pressure
Contr.-rod trav.mm: 12.50...12.60
Measurement
            1/min : 500
Speed
1st pressure hPa : -
                   : 11.40...11.50
 C-rod trav.mm
                  : 570
2nd pressure hPa
  C-rod trav.mm : 12.30...12.40
3rd pressure hPa : 440
                   : 11.70...11.90
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
            1/min : 700
Speed
Del.quantity cm3/: 180.0...183.0
1000H.: (177.0...186.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.50
            1/min : 1120...1130
Speed
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 400.0...430.0
            1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
Speed
           1/min : 250
```

E06

Contr.-rod trav.mm: 4.70...4.90
Del.quantity cm3/: 25.0...29.0
1000H.: (22.0...32.0)
Dispersion cm3/: 5.00
1000H.: (7.00)

Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm

```
: 2.60...2.70
: (2.55...2.75)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Prestroke mm
Note inst. in remarks column
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 1-5-3-6-2-4
Test sheet
                    : PEN 12.1 B : 09.03.87
Edition
Superceeded
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no. : 0 401 876 756
                                                      SD mark cyl. no. : 1
Injection pump
Pump designation : PE6P12OA32ORS3189
                                                      BASIC SETTING
EP type number
                  : 0 411 826 759
                                                                      1/mi: 700
Governor
                                                      1st speed
Governor design. : RSV650...750P4/421-3
Governer no.
                    : 0 421 833 252
                                                      Contr.-rod trav.mm: 11.00...11.10
                                                      Del.quantity cm3/: 23.0...23.3
Customer-spec. information
Customer
                   : VOLVO-PENTA
                                                                    100H.: (22.7...23.6)
                    : TD121GG
Engine
                                                                    cm3/:0.5
                                                      Dispersion
1st version kW
                  : 199.0
                                                                    100H.: (0.9)
Speed
              1/min: 1500
                                                      2nd speed 1/min: 650.0

Contr.-rod trav. m: 3.3...3.5

Del.quantity cm3/: 2.0...2.4

100H.: (1.7...2.7)

Dispersion cm3/: 0.5

100H.: (0.7)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
Inlet press., bar : 1.50
                                                      Control-lever position
                                                                   Degree: -3
                                                                    1/min: 800
Calibrating nozzle-holder
                                                      Speed
                                                      Cont.-rod travelmm: 0.30...1.70
                  : 1 688 901 019
 assembly
Opening
                                                      Governor-spring reload
                   : 207...210
                                                      Notch setting x : 4.75
 pressure, bar
Perforated-plate
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
                    : 0,8
 diameter mm
                                                      1st version
                                                                    1/min: 700
                                                      Speed
Test inj. tubing : 1 680 750 067
                                                      Del.quantity cm3/: 230.0...233.0
                                                                   1000H.: (227.0...236.0)
cm3/: 5.00
Outside diameter
                                                      Dispersion
x Wall thickness
                                                                   1000H.: (9.00)
                    : 6.00x1.50x1000
x Lerigth mm
                                                      HIGHEST RATED SPEED
                                                      1st version
(A) Injection pump setting values
    Insp. values in parentheses
                                                      Control-lever
    Set constant delivery quant.
                                                       position degrees: 42...50
    per values
                                                      Testing:
                                                      1st c-rod trav.mm : 10.00
Speed 1/min : 750...755
START OF DELIVERY
Test pressure, bar: 25...27
                                                      2nd c-rod trav.mm : 4.00
E07
```

```
1/min: 791...804
  Speed
4th speed 1/min: 950
  C-rod trav.mm
                    : 0.30...1.70
LOWEST RATED SPEED I
Control-lever
 position degrees: 35...43
Setting point w/out aux. spring
             1/min : 650
Speed
Contr.-rod trav.mm: 3.4

Speed 1/min: 650
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed
             1/min : 630...690
SET IDLE AUXILIARY SPRING
Speed
             1/min : 2.00
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.00
             1/min : 750...755
Speed
STARTING FUEL DELIVERY
Speed 1/min : 100
Del.quantity cm3/ : 400.0...520.0
              1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00
Remarks:
```

```
: 1- 4- 7- 6- 8- 5-
2- 3
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence
Note inst. in remarks column
                   : KHD 20.2 K
: 14.08.87
Test sheet
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Edition
                                                                         270-315
                   : 3.86
Superceeded
                                                    Tolerance + - 0
Calibrating vil
                   : ISO-4113
                                                                       : 0.50 (0.75)
Combination no.
                   : 0 401 878 125
                                                    SD mark cyl. no. : 1
Injection pump
                                                    BASIC SETTING
Pump designation : PE8P130A620/4LS485
EP type number : 0 411 838 038
                                                    1st speed
                                                                  1/mi: 750
Governor
Governor design. : R$250/1000P1A422R
                                                    Contr.-rod trav.mm: 15.00...15.10
                 : 0 421 821 003
Governer no.
                                                    Del.quantity cm3/: 35.8...36.1
Customer-spec. information
                                                                  100H.: (35.4...36.4)
Customer
                   : KHD
Engine
                   : BA8 M816
                                                    Dispersion
                                                                 cm3/:0.6
TEST BENCH REQUIREMENTS
                                                                  100H.: (1.0)
Calibrating-oil inlet temp. °C
                                                                 1/min: 250.0
                                                    2nd speed
                                                   Contr.-rod trav. m: 5.8...6.0

Del.quantity cm3/: 2.0...2.6

100H.: (1.7...2.9)

Dispersion cm3/: 1.0
                   : 38...42
Overflow valve
                   : 1 417 413 025
                                                                 100H.: (1.4)
Inlet press., bar : 1.50
                                                    SLEEVE POSITION
                                                    Control-Lever position
Calibrating nozzle-holder
           : 1 688 901 019
 assembly
                                                                Degree: -3
                                                                 17min: 800
                                                    Speed
                                                    Cont.-rod travelmm: 0.30...0.70
Opening
                   : 207...210
 pressure, bar
                                                    Governor-spring reload
Perforated-plate
                                                    Notch setting x : 5.00
 diameter mm
                   : 0,8
                                                    HIGHEST RATED SPEED
                                                    1st version
                                                    Control-lever
Test inj. tubing : 1 680 750 067
                                                    position degrees: 54...62
Outside diameter
x Wall thickness
                                                    Testing:
                   : 6.00x1.50x1000
                                                    1st c-rod trav.mm : 14.00
x Length mm
                                                               1/min : 1040...1050
                                                      Speed
                                                    2nd c-rod trav.mm : 4.00
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                               1/min : 1105...1135
                                                      Speed
                                                                1/min : 1270
                                                    4th speed
    per values
                                                      C-rod trav.mm : 0.30...1.40
START OF DELIVERY
                                                    TORQUE CONTROL
                                                    Torque-control curve - 1st version
Test pressure, bar: 25...27
                                                    1st speed 1/min: 1000
                   : 2.00...2.10
                                                      C-rod trav.mm : 15.00...15.10
Prestroke mm
                                                    2nd speed 1/min: 550
                   : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00
                                                      C-rod trav.mm : 15.00...15.20
E09
```

ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 14.00 Speed 1/min: 1040...1050

Remarks:

Test specifications upon request.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     START OF DELIVERY
                                                     Test pressure, bar: 25...27
Note inst. in remarks column
                                                                         : 4.00...4.10
                                                     Prestroke mm
Test sheet
                                                                         : (3.95...4.15)
                   : MB 14,6 P 1
                   : 21.08.87
Edition
                                                     Contr.-rod trav.mm: 9.00...12.00
Superceeded
                   : 10.85
                                                                        : 8- 7- 2- 6- 3- 5-
                                                     Cam sequence
Calibrating oil
                 : ISO-4113
                                                                           4- 1
Combination no.
                   : 0 401 878 703
                                                     SD ang. spacing CS: 0-45-90-135-180-225-
Injection pump
Pump designation
                  : PE8P1204320LS3816-10
                                                                          270-315
                                                     Tolerance + - 0
EP type number : 0 411 828 715
                                                                        : 0.50 (0.75)
Governor
Governor design. : RSV650...1150P0A823
Governer no. : 0 421 833 166
                                                     SD mark cyl. no. : 8
                                                     BASIC SETTING
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                                    1/mi: 1180
                                                     1st speed
                   : 0M422A
                                                     Contr.-rod trav.mm: 9.30...9.40
Engine
1st version kW : 206.0
                                                     Del.quantity cm3/: 13.7...13.9
              1/min: 2300
Speed
                                                                   100H.: (13.4...14.2)
TEST BENCH REQUIREMENTS
                                                                   cm3/:0.5
                                                     Dispersion
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                   100H.: (0.9)
                                                    2nd speed 1/min: 650.0
Contr.~rod trav. m: 3.4...3.6
Del.quantity cm3/: 1.6...2.2
100H:: (1.3...2.5)
Overflow valve
                   : 1 417 413 025
Inlet press., bar: 1.50
                                                                   cm3/:0.8
                                                     Dispersion
                                                                   100H.: (1.2)
Overflow
 quantity min. 1/h: 100...120
                                                     SLEEVE POSITION
Calibrating nozzle-holder
                                                     Control-lever position
                                                                  Degree: -3
1/min: 800
             : 1 688 901 019
 assembly
                                                     Cont.-rod travelmm: 0.30...0.70
Opening
pressure, bar
                   : 207...210
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 diameter mm
                   : 0,8
                                                     1st version
                                                    Speed 1/min: 1180
Del.quantity cm3/: 137.0...139.0
1000H.: (134.0...142.0)
Test in i. tubing
                   : 1 680 750 067
                                                                 cm3/ : 5.00
                                                     Dispersion
                                                                  1000H.: (9.00)
Outside diameter
x Wall thickness
                   : 6.00x1.50x1000
                                                     HIGHEST RATED SPEED
x Length mm
                                                     1st version
(A) Injection pump setting values
                                                     Control-lever
    Insp. values in parentheses
                                                      position degrees: 42...50
    Set constant delivery quant.
    per values
                                                     Testing:
                                                     1st c-rod trav.mm : 8.30
```

1/min : 1210...1220 Speed 2nd c-rod trav.mm : 4.00 1/min : 1235...1255 1/min : 1400 Speed 4th speed C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 20...28 Setting point w/out aux. spring Speed 1/min : 650 Contr.-rod trav.mm: 3.6 Speed 1/min : 650 C-rod trav.mm : 3.50...3.70 C-rod trav.mm : 2.00 1/min : 655...695 Speed SET IDLE AUXILIARY SPRING 1/min : 2.00 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1180 1st speed C-rod trav.mm : 9.30...9.40 2nd speed 1/min: 975 C-rod trav.mm : 10.10...10.20 3rd speed 1/min: 1075 C-rod trav.mm : 9.60...9.80 4th speed 1/min: 700 C-rod trav.mm : 10.10...10.30 FUEL-DELIVERY CHARACTERISTICS 1/min : 950 Speed Del.quantity cm3/: 154.0...158.0 1000H.: (151.0...161.0) cm3/: 8.00 1000H:: (12.0) Dispersion ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 8.30 Speed 1/min : 1210...1220 STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0) Remarks:

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 4.00...4.10
                                                      Prestroke mm
                                                                          : (3.95...4.15)
Note inst. in remarks column
                                                      Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
Test sheet
                    : MB 14,6 S 1
Edition
                    : 13.05.87
Superceeded
Calibrating oil : ISO-4113
                                                      SD ang. spacing CS: 0-45-90-135-180-225-
SD ang. spacing CS: 270-315
Tolerance + - : 0.50 (0.75)
Combination no.
                    : 0 401 878 704
Injection pump
Pump designation
                    : PE8P110A320L$3802-10
EP type number
                    : 0 411 818 710
                                                      SD mark cyl. no. : 8
Governor
                    : RSV750...1150P0A820-
                                                      BASIC SETTING
Governor design.
                    : 0 421 833 170
                                                                      1/mi: 1100
Governer no.
                                                      1st speed
                                                      Contr.-rod trav.mm: 11.50...11.60
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                      Del.quantity cm3/: 13.1...13.3
Engine
                    : 0M422
                                                                     100H.: (12.8...13.5)
1st version kW : 206.0
                                                                     cm3/:0.4
              1/min: 2300
Speed
                                                      Dispersion
                                                                     100H.: (0.8)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                                     1/min: 750.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 4.8...5.0
                    : 38...42
                                                      Del.quantity cm3/: 1.6...2.2
                                                                     100H.: (1.3...2.4)
cm3/: 0.4
100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                      Dispersion
Inlet press., bar : 1.50
                                                      SLEEVE POSITION
                                                      Control-lever position
Overflow
                                                                   Degree: -3
 quantity min. 1/h: 100...120
                                                                     17min: 800
                                                      Cont.-rod travelmm: 0.30...1.00
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                      1st version
                                                      Speed
                                                                     1/min: 1100
                                                      Del.quantity cm3/: 131.0...133.0
                                                                   1000H: (128.5...135.5)
cm3/: 4.00
1000H: (8.00)
Test inj. tubing : 1 680 750 015
                                                      Dispersion
Outside diameter
x Wall thickness
                : 6.00x1.50x600
                                                      HIGHEST RATED SPEED
x Length mm
                                                      1st version
(A) Injection pump setting values
                                                      Control-lever
    Insp. values in parentheses
Set constant delivery quant.
                                                       position degrees: 40...48
    per values ____
                                                      Testing:
                                                      1st c-rod trav.mm: 10.50
                                                      Speed 1/min: 1160...1170
2nd c-rod trav.mm: 4.00
START OF DELIVERY
Test pressure, bar: 25...27
E13
```

Speed 1/min: 1190...1210 4th speed 1/min: 1300 C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I Control-lever position degrees: 23...31 Setting point w/out aux. spring Speed 1/min: 750 Contr.-rod trav.mm: 4.9 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.50 Speed 1/min: 750 C-rod trav.mm : 4.80...5.00 SET IDLE AUXILIARY SPRING 1/min : 2.00 Speed ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 10.50 Speed 1/min : 1160...1170 STARTING FUEL DELIVERY Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    START OF DELIVERY
Note inst. in remarks column
                                                    Test pressure, bar: 25...27
                   : MB 14,6 P 2
: 09.03.87
Test sheet
                                                    Prestroke mm
                                                                       : 4.00...4.10
Edition
                                                                       : (3.95...4.15)
                                                    Contr.-rod trav.mm: 9.00...12.00
Superceeded
                   : 12.9.86
Calibrating oil
                                                                                        3- 5-
                   : ISO-4113
                                                    Cam sequence
                                                                       : 8- 7- 2- 6-
                   : 0 401 878 708
Combination no.
Injection pump
Pump designation : PE8P120A320LS3816-10
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
                                                                         270-315
EP type number
                   : 0 411 828 715
                                                    Tolerance + - 0
                                                                       : 0.50 (0.75)
Governor
                   : RSV450...1150P0A823~
Governor design.
                                                    SD mark cyl. no. : 8
                   : 0 421 833 243
Governer no.
                                                    BASIC SETTING
Customer-spec. information
Customer
                                                                   1/mi: 1130
                   : DAIMLER-BENZ
                                                    1st speed
                                                    Contr.-rod trav.mm: 11.00...11.10
Engine
                   : 0M422A
1st version kW : 243.0
                                                    Del.quantity cm3/: 15.8...16.0
              1/min: 2300
Speed
                                                                  100H.: (15.5...16.3)
TEST BENCH REQUIREMENTS
                                                    Dispersion
                                                                  cm3/:0.5
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                  100H.: (0.9)
                                                                  1/min: 450.0
Overflow valve
                                                    2nd speed
                                                    Contr.-rod trav. m: 4.4...5.6
                   : 1 417 413 025
                                                    Del.quantity cm3/: 1.6...2.2
                                                                 100H.: (1.3...2.5)
cm3/: 0.8
100H.: (1.2)
Inlet press., bar : 1.50
                                                    Dispersion
Over flow
 quantity min. 1/h: 100...120
                                                    SLEEVE POSITION
                                                    Control-lever position
Calibrating nozzle-holder
                                                                Degree: -3
1/min: 800
                  : 1 688 901 019
 assembly
                                                    Speed
Opening
                                                    Cont.-rod travelmm: 0.30...0.70
 pressure, bar
                   : 207...210
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 diameter mm
                   : 0,8
                                                    1st version
                                                    Speed
                                                                  1/min: 1130
                                                    Del.quantity cm3/: 158.0...160.0
                                                                1000H: (155.0...163.0)
cm3/: 5.00
1000H: (9.00)
                  : 1 680 750 067
Test inj. tubing
                                                    Dispersion
Outside diameter
x Wall thickness
                   : 6.00x1.50x1000
                                                    HIGHEST RATED SPEED
x Length mm
                                                    1st version
(A) Injection pump setting values
                                                    Control-lever
                                                     position degrees: 38...46
    Insp. values in parentheses
    Set constant delivery quant.
    per values
                                                    Testing:
£15
```

```
1st c-rod trav.mm : 10.00
             1/min : 1160...1170
  Speed
2nd c-rod trav.mm : 4.00
Speed 1/min: 1185...1205
4th speed 1/min: 1400
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 15...23
Setting point w/out aux. spring
            1/min : 450
Speed
Contr.-rod trav.mm: 4.5
Testing:
              1/min : 100
Speed
C-rod trav.mm min : 19.50
Speed
             1/min : 450
C-rod trav.mm
                  : 4.40...4.70
                    : 2.00
C-rod trav.mm
Speed
             1/min : 450...520
SET IDLE AUXILIARY SPRING
             1/min : 2.00
Speed
FUEL-DELIVERY CHARACTERISTICS
              1/min : 600
Speed
Del.quantity cm3/: 158.0...162.0
1000H.: (153.0...165.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.00
             1/min : 1160...1170
Speed
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 140.0...160.0
1000H.: (136.0...164.0)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                              : 4.00...4.10
                                                         Prestroke mm
                                                                             : (3.95...4.15)
Note inst. in remarks column
                                                         Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8-7-2-6-3-5-
Test sheet
                     : MB 14,7 H
                     : 26.06.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                        SD ang. spacing ^{\circ}CS: 0-45-90-135-180-225-
SD ang. spacing ^{\circ}CS: 270-315
Tolerance + - ^{\circ}: 0.50 (0.75)
Combination no.
                     : 0 401 878 710
Injection pump
Pump designation : PE8P110A320LS3845
EP type number
                     : 0 411 818 715
                                                         SD mark cyl. no. : 8
Governor
                     : RSV350...750POA824-1
                                                         BASIC SETTING
Governor design.
                     : 0 421 833 270
                                                                         1/mi: 700
Governer no.
                                                         1st speed
                                                         Contr.-rod trav.mm: 13.90...14.00
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                         Del.quantity cm3/: 14.8...15.0
                     : 0M442
Engine
                                                                        100H.: (14.5...15.2)
1st version kW : 163.0
               1/min: 1500
Speed
                                                         Dispersion
                                                                       cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                        100H.: (0.8)
                                                        2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.7...7.9
Del.quantity cm3/: 1.4...1.8
Calibrating-oil inlet temp. OC
                     : 38...42
                                                                       100H.: (1.1...2.0) cm3/: 0.4
Overflow valve
                     : 1 417 413 025
                                                        Dispersion
                                                                        100H .: (0.7)
Inlet press., bar : 1.50
                                                         SLEEVE POSITION
                                                        Control-lever position
Overflow
                                                                      Degree: -3
 quantity min. 1/h: 100...120
                                                                       17min: 800
                                                        Cont.-rod travelmm: 0.30...0.80
Calibrating nozzle-holder
                    : 0 681 343 009
 assembly
                                                        Governor-spring reload
Opening
                                                        Notch setting x : 3.00
 pressure, bar : 172...175
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 015
                                                        1st version
                                                                       1/min: 700
                                                        Speed
                                                        Del.quantity cm3/: 148.0...150.0
1000H:: (145.5...152.5)
Dispersion cm3/: 4.00
Outside diameter
x Wall thickness
                   : 6.00X1.50X600
x Length mm
                                                                      1000H.: (8.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        HIGHEST RATED SPEED
                                                        1st version
    per values
                                                        Control-lever
                                                         position degrees: 76...84
START OF DELIVERY
                                                        Testing:
Test pressure, bar: 25...27
E17
```

1st c-rod trav.mm : 12.90 Speed 1/min : 750...755 2nd c-rod trav.mm : 4.00 Speed 1/min : 780...793

LOWEST RATED SPEED I Control-lever

position degrees: 64...72 Setting point W/out aux. spring

Speed 1/min: 350 Contr.-rod trav.mm: 7.1

Testing:

Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 350 C-rod trav.mm: 7.00...7.20

SET IDLE AUXILIARY SPRING Speed 1/min : 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/: 150.0...170.0 1000H.: (146.0...174.0)

Remarks:

Observe VDT-I-420/120

APPLICATION Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Test pressure, bar: 25...27
                                                                        : 4.00...4.10
: (3.95...4.15)
Note inst. in remarks column
                                                     Prestroke mm
                   : MB 18,3 I 2
: 13.05.87
                                                     Contr.-rod trav.mm: 9.00...12.00
Test sheet
                                                                       : 10- 9- 4- 1- 8-
- 6- 3- 5- 2
Edition
                                                                                              7
                                                     Cam sequence
                                                                                          8-
                   : 28.10.86
Superceeded
                   : ISO-4113
Calibrating oil
Combination no.
                    : 0 401 879 704
                                                     SD ang. spacing CS: 0-45-72-117-144-189-
                                                                          216-261-288-333
Injection pump
                                                     Tolerance + - 0
                                                                        : 0.50 (0.75)
                   : PE10P110A320LS3818-
Pump designation
                    : 0 411 819 706
EP type number
                                                     SD mark cyl. no. : 10
Governor
                   : RSV450...1150P0A823-
                                                     BASIC SETTING
Governor design.
                    : 0 421 833 245
                                                     1st speed 1/mi: 1150
Governer no.
Customer-spec. information
                                                     Contr.-rod trav.mm: 11.00...11.10
Customer
                   : DAIMLER-BENZ
                                                     Del.quantity cm3/ : 12.6...12.8
Engine
                   : OM 423
                                                                   100H.: (12.3...13.0)
1st version kW : 261.0
              1/min: 2300
                                                     Dispersion
                                                                  cm3/:0.4
Speed
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.8)
                                                    2nd speed 1/min: 450.0
Contr.-rod trav. m: 6.4...6.6
Del.quantity cm3/: 1.2...2.0
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                                                                   100H.: (0.9...2.2)
                                                                  cm3/:0.4
                    : 1 417 413 025
                                                    Dispersion
                                                                   100H.: (0.7)
Inlet press., bar : 1.50
                                                     SLEEVE POSITION
                                                     Control-lever position
Over flow
 quantity min. 1/h: 130...150
                                                                 Degree: -3
                                                                  17min: 800
                                                     Speed
                                                     Cont.-rod travelmm: 0.30...1.00
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                    Governor-spring reload
                                                    Notch setting x : 3.50
Opening
 pressure, bar : 172...175
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 015
                                                     1st version
                                                    Speed
                                                                  1/min: 1150
                                                    Del.quantity cm3/: 126.0...128.0
Outside diameter
                                                                 1000H.: (123.5...130.5)
x Wall thickness
                                                    Dispersion cm3/ : 4.00
                   : 6.00x1.50x600
x Length mm
                                                                 1000H.: (8.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    HIGHEST RATED SPEED
                                                     1st version
    per values
                                                    Control-lever
                                                     position degrees: 39...47
START OF DELIVERY
E19
```

```
Testing:
1st c-rod trav.mm : 10.00
  Speed
            1/min: 1165...1175
2nd c-rod trav.mm : 4.00
            1/min: 1210...1230
  Speed
            1/min : 1300
4th speed
                : 0.30...1.40
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
           1/min : 450
Speed
Contra-rod trav.mm: 6.5
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 19.50
            1/min : 450
Speed
C-rod trav.mm
                : 6.40...6.60
C-rod trav.mm
                 : 2.00
            1/min: 470...530
Speed
SET IDLE AUXILIARY SPRING
Speed
            1/min : 2.00
FUEL-DELIVERY CHARACTERISTICS
Speed
            1/min : 600
Del.quantity cm3/: 101.0...107.0
            1000H.: (98.0...110.0)
             cm3/:6.00
Dispersion
            1000H.: (9.00)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.00
            1/min : 1165...1175
Speed
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 130.0...150.0
            1000H.: (126.0...154.0)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Test pressure, bar: 25...27
Note inst. in remarks column
                                                                        : 4.00...4.10
                                                    Prestroke mm
                                                                        : (3.95...4.15)
Test sheet
                   : MB 18,3 I 3
: 09.03.87
                                                    Contr.-rod trav.mm: 9.00...12.00
                                                                      : 10- 9- 4- 1-
- 6- 3- 5-
Edition
                                                                                             7
                                                    Cam sequence
Superceeded
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 879 705
                                                    SD ang. spacing CS: 0-45-72-117-144-189-
                                                                        216-261-288-333
: 0.50 (0.75)
Injection pump
                                                    Tolerance + - 0
                   : PE10P110A320L$3818-1
Pump designation
EP type number
                   : 0 411 819 706
                                                    SD mark cyl. no. : 10
Governor
                   : RSV350...1050POA824-
                                                    BASIC SETTING
Governor design.
Governer no.
                   : 0 421 833 258
                                                                 1/mi: 1000
                                                    1st speed
Customer-spec. information
                                                    Contr.-rod trav.mm: 11.30...11.40
Customer
                   : DAIMLER-BENZ
                                                    Del.quantity cm3/: 11.7...11.9
Engine
                   : 0M 423
                                                                  100H.: (11.4...12.1)
1st version kW
                 : 242.0
              1/min: 2100
Speed
                                                    Dispersion
                                                                  cm3/:0.4
                                                                  100H.: (0.8)
TEST BENCH REQUIREMENTS
                                                    2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.6...7.9
Calibrating-oil inlet temp. °C
                   : 38...42
                                                    Del.quantity cm3/: 1.2...2.0
                                                                  100H.: (0.9...2.2)
Overflow valve
                   : 1 417 413 025
                                                                  cm3/:0.4
                                                    Dispersion
                                                                  100H.: (0.7)
Inlet press., bar: 1.50
                                                    SLEEVE POSITION
Overflow
                                                    Control-lever position
 quantity min. 1/h: 130...150
                                                                 Degree: -3
                                                                  17min: 800
                                                    Speed
Calibrating nozzle-holder
                                                    Cont.-rod travelmm: 0.30...1.00
                  : 0 681 343 009
 assembly
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar
                  : 172...175
                                                    1st version
                                                                  1/min: 1000
                                                    Speed
                                                    Del.quantity cm3/: 117.0...119.0
1000H.: (114.5...121.5)
Dispersion cm3/: 4.00
1000H.: (8.00)
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                    HIGHEST RATED SPEED
                                                    1st version
                                                    Control-lever
(A) Injection pump setting values
                                                     position degrees: 36...44
    Insp. values in parentheses
    Set constant delivery quant.
    per values
                                                    Testing:
                                                    1st c-rod trav.mm : 10.30
START OF DELIVERY
                                                      Speed 1/min: 1065...1070
E21
```

```
2nd c-rod trav.mm : 4.00
  Speed 1/min: 1100...1113
LOWEST RATED SPEED I
Control-lever
 position degrees: 15...23
Setting point w/out aux. spring
Speed 1/min: 350
Contr.-rod trav.mm: 7.7
Testing:
              1/min : 100
Speed
C-rod trav.mm min : 19.50
Speed 1/min : 350
C-rod trav.mm : 7.60...7.90
C-rod trav.mm
                    : 2.00
SET IDLE AUXILIARY SPRING
          1/min : 2.00
Speed
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/: 97.0...101.0
1000H.: (94.0...104.0)
              cm3/: 6.00
1000H.: (9.00)
Dispersion
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
full-load trav.mm: 12.20
            1/min : 1165...1175
Speed
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 130.0...150.0
1000H.: (126.0...154.0)
Remarks:
Observe VDT-I-420/120
0
```

```
: 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Cam sequence
Note inst. in remarks column
Test sheet
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                     : STE 9,7 E
: 03.04.87
Edition
Superceeded
                     : ISO-4113
Calibrating oil
                                                        SD mark cyl. no. : 1
Combination no.
                     : 0 401 886 701
                                                        BASIC SETTING
Injection pump
                                                                        1/mi: 1200
                                                        1st speed
                    : PE6P110A721RS3101
Pump designation
                                                        Contr.-rod trav.mm: 13.00...13.10
EP type number
                    : 0 411 816 725
Governor
Governor design. : RSV400..1200P1A527
Governer no. : 0 421 833 259
                                                        Del.quantity cm3/: 17.2...17.4
                                                                       100H.: (16.9...17.7)
Customer-spec. information
                                                                       cm3/:0.4
Customer
                    : STEYR
                                                        Dispersion
Engine
                    : WD615.85/87
                                                                       100H.: (0.7)
1st version kW : 206.0
                                                                       1/min: 400.0
                                                        2nd speed
                                                        Contr.-rod trav. m: 6.2...6.4

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/: 0.4

100H.: (0.7)
               1/min: 2400
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                     : 38...42
                                                        SLEEVE POSITION
Overflow valve
                                                        Control-lever position
                                                                      Degree: -3
1/min: 800
                     : 1 417 413 025
                                                        Speed
Inlet press., bar : 1.50
                                                        Cont.-rod travelmm: 0.30...0.70
Calibrating nozzle-holder
                                                        Governor-spring reload
                    : 0 681 343 009
 assembly
                                                        Notch setting x : 4.75
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                        1st version
                                                                       1/min: 1200
                                                        Speed
                                                        Charge press. hPa : 1200
Del.quantity cm3/ : 172.0...174.0
Test inj. tubing : 1 680 750 015
                                                                      1000H.: (169.0...177.0)
Outside diameter
                                                                      cm3/ : 4.00
x Wall thickness
                                                        Dispersion
                                                                      1000H .: (7.50)
x Length mm
                   : 6.00x1.50x600
                                                        HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
                                                        1st version
    Set constant delivery quant.
                                                        Control-lever
    per values ____
                                                         position degrees: 62...70
START OF DELIVERY
                                                        Testing:
Test pressure, bar: 25...27
                                                        1st c-rod trav.mm : 12.00
                                                        Speed 1/min: 1240...1250
2nd c-rod trav.mm: 4.00
Speed 1/min: 1295...1325
                     : 2.80...2.90
Prestroke mm
                     : (2.75...2.95)
                                                                      1/min : 1460
Contr.-rod trav.mm: 9.00...12.00
                                                        4th speed
£23
```

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-Lever position degrees: 24...32 Setting point w/out aux. spring 1/min : 400 Speed Contr.-rod trav.mm: 5.8 Speed 1/min : 400 : 6.20...6.40 C-rod trav.mm mm : 2.00 1/min : 530...590 C-rod trav.mm Speed TORQUE CONTROL Dimension a mm : 1200 1 Torque-control curve - 1st version 1st speed 1/min : 3.00. C-rod trav.mm : ..13.10 700 1 2nd speed 1/min : 3.60. C-rod trav.mm : ..13.70 n C-rod trav.mm : .0.00 1120 1 4th speed 1/min: 3.20. C-rod trav.mm : ..13.40 0 O compensator (LDA_ADA_ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 1200 Contr.-rod trav.mm: 13.60...13.70 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 9.80...10.00 2nd pressure hPa : 660 : 12.70...12.80 C-rod trav.mm 3rd pressure hPa : 320 C-rod trav.mm : 10.60...10.80 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press, hPa : 1200 1/min : 700 Speed Del.quantity cm3/: 178.0...184.0 1000H.: (175.0...187.0) Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 104.0...108.0 1000H.: (101.0...111.0) ROTATIONAL-SPEED LIMITATION 1st version

1mm control-rod travel less than

full-load trav.mm: 12.00 Speed 1/min: 1240...1250

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...170.0

1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ALO 13,8 A1 : 7.86 Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 0 402 046 202 Injection pump Pump designation : PES6P120A320RS410 Governor Governor design. : RQV300...875PA498K Customer-spec. information : ALLIS CHALMERS Customer : 6138 LT Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.5 Calibrating nozzle-holder : 0 681 443 022 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 060 Outside diameter x Wall thickness x Length mm : 8,00X2,00X1000 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ START OF DELIVERY Test pressure, bar: 2,8...2,9 10.5 Prestroke mm 1-5-3-6-2-4 SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance +- : 0,5(0,75) SD mark cyl. no. : 1 BASIC SETTING 1st speed 1/mi: 875 Contr.-rod trav.mm: 8,7 Del.quantity cm3/: 16,1...16,3 Dispersion cm3/:0,502nd speed 1/min: 300 Contr.-rod trav. m: 5,2 Del.quantity cm3/: 1,8...2,4 Dispersion cm3/: 1,0 SLEEVE POSITION Control-lever position Degree: -1 Speed 17min: 900 Cont.-rod travelmm: 15,2...17,8 Governor-spring reload Notch setting x : -FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 875 Speed Del.quantity cm3/: 161.0...163.0 1000H.: (157,0...167,0) HIGHEST RATED SPEED 1st version Control-lever position degrees: 58...66 Testing: 1st c-rod trav.mm : 7.7 Speed 1/min : 915...925 2nd c-rod trav.mm : 4,0 Speed 1/min: 945...975 4th speed 1/min: 900 C-rod trav.mm : 0..1.0 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Setting point w/out aux. spring 1/min : 300 Contr.-rod trav.mm: 5,1...5,3 Testing: Speed 1/min: 100 C-rod trav.mm min: 7,9 C-rod trav.mm : 2,0 1/min : 440...500 1/min : 550 Speed C-rod trav.mm max : 1,0

TORQUE CONTROL Dimension a mm : 0.05 Torque-control curve - 1st version 1st speed 1/min: 875 C-rod trav.mm : 8.70 2nd speed 1/min : 600 C-rod trav.mm : 8,75...8,85 SWITCH-OVER POINT 1/min: 180...240 Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 600 1/min: 144.5 Speed Del.quantity cm3/: ...148.5 (140, 1000H.: 5...152,5) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 7,7
speed 1/min: 915...925 Speed STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 130,0...170,0 LOW IDLE

1

Speed 1/min : 300
Del.quantity cm3/ : 18,0...24,0
Remarks:

```
: 2.80...2.90
: (2.75...2.95)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Prestroke mm
                                                     Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                     Cam sequence : 1-5-3-6-2-4
Test sheet
                   : RVI 8,8 D 5
Edition
                   : 12.12.86
Superceeded
                                                     SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance ^{+} - ^{-} : 0.50 (0.75)
                  : ISO-4113
Calibrating oil
Combination no.
                   : 0 402 046 328
                                                     BASIC SETTING
Injection pump
Pump designation : PES6P120A320RS419-2
                                                                   1/mi: 500
                                                     1st speed
EP type number
                   : 0 412 026 048
                                                     Contr.-rod trav.mm: 8.70...8.80
Governor
Governor design. : RQ275/950PA753-1
Governer no.
                   : 0 421 801 377
                                                     Del.quantity cm3/: 11.6...11.8
                                                                   100H.: (11.3...12.1)
Customer-spec. information
Customer
                   : RVI
                                                     Dispersion
                                                                   cm3/:0.5
Engine
                   : MIDS/PS062045 FC
                                                                   100H.: (0.9)
1st version kW : 144.0
              1/min: 1900
                                                                   1/min: 275.0
Speed
                                                     2nd speed
                                                     Contr.-rod trav. m: 5.1...5.3
                                                     Del.quantity cm3/: 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/: 0.8
100H.: (1.2)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                                                     SLEEVE POSITION
                   : 1 417 413 025
                                                     Control-lever position
                                                                  Degree: -2
                                                                  17min: 525
Inlet press., bar: 1.50
                                                     Cont.-rod travelmm: 19.20...20.80
Calibrating nozzle-holder
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
              : 1 688 901 019
Opening
                                                     1st version
                   : 207...210
                                                                   1/min: 500
 pressure, bar
                                                     Speed
                                                     Charge press. hPa: 700
                                                    Del.quantity cm3/: 116.0...118.0
1000H.: (113.0...121.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
Perforated-plate
                   : 0.8
diameter mm
Test inj. tubing : 1 680 750 067
                                                     HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                     Setting point:
                   : 6.00x1.50x1000
                                                     Speed 1/min : 525
x Lerigth mm
                                                     Contr.-rod trav.mm: 20.0
(A) Injection pump setting values
                                                     Testing:
    Insp. values in parentheses
    Set constant delivery quant.
                                                     1st c-rod trav.mm : 7.20
                                                                1/min: 1015...1030
    per values
                                                       Speed
                                                     2nd c-rod trav.mm: 4.00
                                                                 1/min: 1050...1080
START OF DELIVERY
                                                       Speed
                                                     4th speed 1/min : 1300
Test pressure, bar: 25...27
                                                       C-rod trav.mm : 0.00...1.00
E28
```

```
LOWEST RATED SPEED I
Setting point w/out aux. spring
      1/min : 275
Speed
Contr.-rod trav.mm: 5.2
Testing:
Speed
            1/min : 200
C-rod trav.mm min: 5.30
           1/min : 275
Speed
C-rod trav.mm : 3.40...3.60
C-rod trav.mm
                  : 2.00
           1/min: 300...340
Speed
TORQUE CONTROL
Torque-control curve - 1st version
          1/min : 500
1st speed
  C-rod trav.mm : 8.70...8.80
2nd speed 1/min: 950
  C-rod trav.mm : 8.00...8.20
3rd speed 1/min: 750
  C-rod trav.mm : 8.30...8.50
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 700
Pressure
Measurement
           1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm : 7.90...8.00
2nd pressure hPa : 245
 C-rod trav.mm
                 : 8.50...8.60
SWITCH-OVER POINT
Speed
           1/min : 195 (215)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
            1/min : 950
Del.quantity cm3/: 136.0...140.0
            1000H.: (133.0...143.0)
Charge press. hPa : -
            1/min : 500
Speed
Del.quantity cm3/: 101.0...104.0
1000H.; (-)
ROTATIONAL-SPEED LIMITATION
1st version
```

F01

1mm control-rod travel less than

full-load trav.mm: 7.20 Speed 1/min: 1015...1030

STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 140.0...160.0

1000H.: (-)

LOW IDLE

Speed 1/min: 275 Contr.-rod trav.mm: 3.40...3.60

Remarks: Start-of-delivery mark 9.5° cam angle after start of delivery cyl. 1

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                       : 2.80...2.90
                                                    Prestroke mm
                                                                       : (2.75...2.95)
                                                    Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
Test sheet
                                                    Cam sequence : 1-5-3-6-2-4
                   : RVI 8,8 D 6
                   : 12.12.86
Superceeded
                                                    SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{10}: 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no. : 0 402 046 329
                                                    START OF DELIVERY DIFFERENCE
Injection pump
Pump designation : PES6P120A320RS419-2
                                                    betw.c-rod trav.mm: 10.00...11.00
EP type number : 0 412 026 048
                                                    BASIC SETTING
Governor
Governor design. : RQ275/950PA843
Governer no. : 0 421 801 378
                                                    1st speed 1/mi: 500
Customer-spec. information
                                                    Contr.-rod trav.mm: 8.00...8.10
Customer
                  : RVI
                                                    Del.quantity cm3/: 10.4...10.6
Engine
                   : MIDS/PS062045D/A
                                                                  100H.: (10.1...10.9)
1st version kW : 129.0
                                                                  cm3/:0.5
             1/min: 1900
                                                    Dispersion
Speed
TEST BENCH REQUIREMENTS
                                                                  100H.: (0.9)
                                                    2nd speed 1/min: 275.0

Contr.-rod trav. m: 4.8...5.0

Del.quantity cm3/: 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/: 0.8
Calibrating-oil inlet temp. OC
                   : 38...42
Overflow valve
                   : 1 417 413 025
                                                                  100H.: (1.2)
Inlet press., bar: 1.50
                                                    SLEEVE POSITION
Calibrating nozzle-holder
                                                    Control-lever position
 assembly
                : 1 688 901 019
                                                                Degree: -2
1/min: 525
                                                    Speed
Opening
                                                    Cont.-rod travelmm: 19.20...20.80
 pressure, bar
                  : 207...210
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 diameter mm
                   : 0,8
                                                    1st version
                                                   Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                   : 6.00x1.50x1000
                                                    HIGHEST RATED SPEED
x Length mm
(A) Injection pump setting values
                                                    Setting point:
    Insp. values in parentheses
                                                    Speed 1/min: 525
Contr.-rod trav.mm: 20.0
    Set constant delivery quant.
    per values
                                                    Testing:
START OF DELIVERY
                                                    1st c-rod trav.mm : 6.40
                                                      Speed 1/min: 1015...1030
Test pressure, bar: 25...27
                                                    2nd c-rod trav.mm: 4.00
F02
```

```
1/min : 1040...1070
1/min : 1300
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 67...75
Setting point w/out aux. spring
Speed 1/min: 275
Contra-rod trav.mm: 3.6
Testing:
              1/min : 200
Speed
C-rod trav.mm min : 5.20
Speed 1/min : 275
C-rod trav.mm : 3.50...3.70
C-rod trav.mm : 2.00
Speed 1/min : 300...340
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 500
  C-rod trav.mm : 8.00...8.10
2nd speed 1/min: 950
C-rod trav.mm: 7.40...7.50
3rd speed 1/min: 750
C-rod trav.mm: 7.60...7.80
SWITCH-OVER POINT
              1/min : 210 (230)
Speed
FUEL-DELIVERY CHARACTERISTICS
Speed
              1/min : 950
Del.quantity cm3/: 123.0...127.0
              1000H.: (120.0...130.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 6.40
              1/min : 1015...1030
Speed
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 140.6...160.0
1000H.: (136.0...164.0)
LOW IDLE
Speed 1/min : 275
Contr.-rod trav.mm: 3.50...3.70
Remarks:
Start-of-delivery mark 9.5° cam angle
```

F03

after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 7,6 L Edition : 7.86

Superceded : -

Calibrating oil : ISO-4113

Combination no. : 0 402 076 026

Injection pump

Pump designation : PES6P11DA72ORS305

Governor

Governor design. : RSV400...1050P2/399D

R

Customer-spec. information Customer: JOHN DEERE

Engine : 6466 A

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. ^{DC} : 38...42

Overflow valve

: 1 417 413 050

Inlet press., bar : 1.5

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6,00x1,50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

START OF DELIVERY

Test pressure, bar: 2,8...2,9
Date of mfg. : (2,75...2

Prestroke mm : .95

: ,95) : 1-5-3-6-2-4

```
SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0,5(0,75)
                                                      TORQUE CONTROL
                                                      Dimension a mm : 1050 1
                                                      Torque-control curve - 1st version 1st speed 1/min: 1,9
SD mark cyl. no. : 1
BASIC SETTING
                                                       C-rod trav.mm :
                                                                                      650 1
                                                      2nd speed 1/min : 2,15.
1st speed 1/mi: 1050
                                                        C-rod trav.mm : ..12,45
Contr.-rod trav.mm: 11,7
                                                       compensator (LDA, ADA, ALDA)
Del.quantity cm3/: 16,0...16,2
                                                      1st version
                                                      Setting
Dispersion cm3/: 0,40
                                                                   1/min : 500
                                                      Speed
2nd speed 1/min: 400
                                                      Pressure
                                                                   hPa : 170
Contr.-rod trav. m: 6,0
Del.quantity cm3/: 1,3...1,9
Dispersion cm3/: 0,20
                                                      Measurement
                                                                   1/min : 500
                                                      Speed
SLEEVE POSITION
                                                      1st pressure hPa : 710
Control-lever position
             Degree: -3
                                                      FUEL-DELIVERY CHARACTERISTICS
              17min: 800
Speed
Cont.-rod travelmm: 0,3...1,0
                                                      1st version
                                                      Charge press. hPa : 650
Governor-spring reload
                                                     Speed 1/min: 170.0
Del.quantity cm3/: ...173.0
Charge press. hPa: 500
Notch setting x : -
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                                  1/min : 89,0.
                                                      Del.quantity cm3/: ..95.0
1st version
              1/min: 1050
Del.quantity cm3/: 160,0...162,0
                                                      ROTATIONAL-SPEED LIMITATION
HIGHEST RATED SPEED
                                                      1st version
                                                      1mm control-rod travel less than
1st version
Control-lever
 position degrees: 40...48
                                                       full-load trav.mm: 10,7
                                                                 1/min : 1085....1100
                                                      Speed
Testing:
1st c-rod trav.mm : 11.7
Speed 1/min : 1050
2nd c-rod trav.mm : 5.1
Speed 1/min : 1155
                                                      STARTING FUEL DELIVERY
                                                      Speed
                                                                   1/min : 100
3rd c-rod trav.mm: 10,7
                                                      Del.quantity cm3/: 140,0...180,0
         1/min : 1085...1100
                                                     HIGH IDLE
LOWEST RATED SPEED I
Control-lever
                                                      1st version
                                                      Charge press. hPa : 1155
 position degrees: 17...25
                                                      Speed 1/min: 5,1
Setting point w/out aux. spring
            1/min : 400
                                                      Contr.-rod trav.mm:
                                                                                       32,5.
Contr.-rod trav.mm: 5.5
                                                     Del.quantity cm3/: ..37,5
Testing:
                                                     LOW IDLE
             1/min : 100
Speed
C-rod trav.mm min : 19,0
                                                     Speed 1/min: 400
Del.quantity cm3/: 13,0...19,0
            1/min : 400
                 : 6,0
C-rod trav.mm
F05
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : MWM 21,6 A3 : 09.03.87 Calibrating oil : ISO-4113 Combination no. : 0 402 640 800 Injection pump Pump designation : PE12P12OA52O/5RS7116 EP type number : 0 412 620 801 Governor Governor design. : RQV300...1150PA756 Governer no. : 0 421 813 486 Customer-spec. information Customer : MWM Engine : TBD234V12 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder assembly : 1 688 901 019 Opening pressure, bar : 207...210 Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness : 6.00x1.50x1000 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ START OF DELIVERY Test pressure, bar: 25...27 : 5.20...5.30 Prestroke mm : (5.15...5.35) Contr.-rod trav.mm: 9.00...12.00

2nd c-rod trav.mm : 4.00 Speed 1/min : 1290...1320 4th speed 1/min : 1400 Cam sequence : 1- 2- 9- 10- 5- 6- 11- 12- 3- 4- 7- 8 C-rod tray.mm : 0.00...1.00 SD ang. spacing CS: 0-30-60-90-120-150-LOWEST RATED SPEED I 180-210-240-270-300-Control-lever 330 position degrees: 14...22 Tolerance + - D : 0.50 (0.75) Testing: BASIC SETTING 1/min : 100 Speed C-rod trav.mm min: 8.00 Speed 1/min: 300 1st speed 1/mi: 800 C-rod trav.mm : 6.50...6.70 Contr.-rod trav.mm: 14.90...15.00 CONSTANT REGULATION 1/min : 300...580 Del.quantity cm3/ : 26.0...26.2 Speed 100H.: (25.8...26.6) compensator (LDA,ADA,ALDA) Dispersion cm3/: 0.5 1st version 100H.: (0.9) Setting 1/min : 500 Speed Pressure hPa : 900 1/min: 300.0 2nd speed Contr.-rod trav. m: 6.5...6.7 Del.quantity cm3/: 3.0...4.0 100H.: (-) Contr.-rod trav.mm: 14.90...15.00 Measurement Dispersion cm3/:0.6Speed 1/min: 500 100H.: (1.0) 1st pressure hPa : -(B) Setting of injection pump with externally-mounted governor C-rod trav.mm : 9.30...9.50 2nd pressure hPa : 625 C-rod trav.mm : 14.70...14.80 3rd pressure hPa : 250 SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 1.30...1.40 C-rod trav.mm : 11.30...11.50 2nd speed 1/min: 350 SWITCH-OVER POINT Sleeve travel mm: 1.60...2.00 3rd speed 1/min: 560
Sleeve travel mm: 2.50...2.90
4th speed 1/min: 1190
Sleeve travel mm: 8.30...8.40 Speed 1/min: 220 (240) ROTATIONAL-SPEED LIMITATION 5th speed 1/min: 1280 1st version Sleeve travel mm: 9.60...9.90 1mm control-rod travel less than SLEEVE POSITION full-load trav.mm: 13.90 1/min : 1190...1200 Control-lever position Speed Degree: -1 1/min: 1200 Speed STARTING FUEL DELIVERY Cont.-rod travelmm: 15.20...17.80 Speed HIGHEST RATED SPEED 1/min : 100 Del.quantity cm3/: 200.0...240.0 1st version 1000H.: (-) Control-lever position degrees: 52...60 Remarks: Testing: 1st c-rod trav.mm : 13.90 Full-load delivery not known. Set Speed 1/min: 1190...1200 according to engine test report. F08

Note inst. in remarks column

Test sheet : SCA 1 Edition : 09.03 Superceeded : 9.84 : SCA 11,0 W : 09.03.87 Calibrating oil : 180-4113

Combination no. : 0 402 646 812

Injection pump

Pump designation : PE6P12OA72ORS7007 EP type number : 0 412 626 803

Governor

Governor design. : RQV200...1000PA539-2 Governer no. : 0 421 813 359

Customer-spec. information : SAAB-SCANIA Customer

: DSC 11 01 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening.

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY Test pressure, bar: 25...27

: 4.50...4.60 Prestroke mm

: (4.45...4.65) Contr.-rod trav.mm: 6.00...8.00

```
Cam sequence : 1-5-3-6-2-4
                                                            Speed
                                                                            1/min: 700
                                                            Charge press. hPa: 900
Del.quantity cm3/: 210.0...212.0
1000H.: (207.0...215.0)
Dispersion cm3/: 7.00
1000H.: (10.00)
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
SD mark cyl. no. : 1
                                                            HIGHEST RATED SPEED
                                                            1st version
START OF DELIVERY DIFFERENCE
                                                            Control-lever
                                                             position degrees: 57...65
betw.c-rod trav.mm: 7.00...14.70
& c-rod tray max. : 21.00
Difference CS : 1.85...2.55
                                                            Testing:
                                                            1st c-rod trav.mm : 13.70
                                                              Speed 1/min: 1040...1050
BASIC SETTING
                                                            2nd c-rod trav.mm: 4.00
                                                              Speed 1/min: 1165...1195
                                                            4th speed 1/min: 1300
1st speed 1/mi: 700
                                                              C-rod trav.mm : 0.00...1.00
Contr.-rod trav.mm: 14.70...14.80
                                                            LOWEST RATED SPEED I
Del.quantity cm3/: 21.0...21.2
                                                            Control-lever
                                                             position degrees: 5...13
                100H.: (20.7...21.5)
                                                            Testing:
Dispersion
                cm3/:0.7
                                                                          1/min : 100
                                                            Speed
                                                            C-rod trav.mm min : 5.90
                                                            Speed 1/min : 225
                100H.: (1.0)
                                                            C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min : 310...370
2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/: 1.4...1.8
                100H.: (-)
                                                             compensator (LDA, ADA, ALDA)
                cm3/:0.3
Dispersion
                100H.: (0.6)
                                                            1st version
(B) Setting of injection pump with externally-mounted governor
                                                            Setting
                                                                          1/min : 500
                                                            Speed
                                                                          hPa : 900
                                                            Pressure
                                                            Contr.-rod trav.mm: 14.70...14.80
SLEEVE TRAVELS
1st speed 1/min: 225
Sleeve travel mm: 1.30...1.40

2nd speed 1/min: 340

Sleeve travel mm: 2.30...2.70

3rd speed 1/min: 550

Sleeve travel mm: 3.90...4.20

4th speed 1/min: 1045
                                                            Measurement
                                                                          1/min : 500
                                                            Speed
                                                            1st pressure hPa : -
                                                            C-rod trav.mm : 11.80...11.90
2nd pressure hPa : 410
                                                            C-rod trav.mm : 14.00...14.10
3rd pressure hPa : 290
  Sleeve travel mm: 8.10...8.30
5th speed 1/min: 1170
  Sleeve travel mm: 9.70...10.00
                                                              C-rod trav.mm : 12.40...12.60
                                                            FUEL-DELIVERY CHARACTERISTICS
SLEEVE POSITION
Control-lever position
               Degree: -1
                17min: 1070
Speed
                                                            1st version
                                                            Charge press. hPa : 900
Cont.-rod travelmm: 15,20...17.80
                                                                          1/min : 1000
                                                            Speed
                                                            Del.quantity cm3/: 201.0...209.0
1000H.: (199.0...211.0)
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
                                                            Charge press. hPa : -
F11
```

1000H.: (162.0...170.0)

ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 13.70 1/min : 1040...1050 Speed

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225

Contr.-rod trav.mm: 4.40...4.60

Del.quantity cm3/: 14.0...18.0 1000H.: (-) Dispersion cm3/: 3.00 1000H.: (6.00)

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania on 1984-12-19 22° before top dead center with control-rod travel 6.0...8.0 mm.

Firing sequence of engine: 1-5-3-6-2-4.

Cam sequence : 1- 2- 9- 10- 5- 6- 11- 12- 3- 4- 7- 8 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : MWM 21,6 B : 05.06.87 SD ang. spacing CS: 0-30-60-90-120-150-Edition 180-210-240-270-300-Superceeded Calibrating oil : ISO-4113 330 Tolerance + - 0 : 0.50 (0.75) Combination no. : 0 402 670 803 BASIC SETTING Injection pump Pump designation : PE12P120A520/5RS7146 1st speed 1/mi: 800 EP type number : 0 412 620 808 Contr.-rod trav.mm: 14.90...15.00 Governor Governor design. : RSUV325...1150P0A358 Governer no. : 0 421 829 105 Del.quantity cm3/ : 26.0...26.2 100H.: (25.8...26.6) Customer-spec. information Customer : MWM cm3/:0.5Dispersion Engine : TBD234V12 100H.: (0.9) TEST BENCH REQUIREMENTS 1/min: 325.0 2nd speed Calibrating-oil inlet temp. °C Contr.-rod trav. m: 6.0...6.2 : 38...42 Del.quantity cm3/: 3.0...4.0 100H: (2.7...4.3)
Dispersion cm3/: 0.6
100H: (1.0)
3rd speed 1/min: 1100
Contr.-rod trav.mm: 7.00...7.10
Del.quantity cm3/: 1.0...6.0 *
100H: (-) Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder : 1 688 901 019 assembly SLEEVE POSITION Opening Control-lever position : 207...210 Degree: -3 1/min: 800 pressure, bar Speed Perforated-plate Cont.-rod travelmm: 0.30...0.70 diameter mm : 0.8 Governor-spring reload Notch setting x : 4.00 Test inj. tubing : 1 680 750 067 HIGHEST RATED SPEED Outside diameter 1st version x Wall thickness Control-lever x Length mm : 6.00x1.50x1000 position degrees: 50...58 (A) Injection pump setting values Testing: Insp. values in parentheses 1st c-rod trav.mm : 13.90 Set constant delivery quant. 1/min : 1190...1200 Speed 2nd c-rod trav.mm : 4.00 per values Speed 1/min: 1280...1310
4th speed 1/min: 1440
C-rod trav.mm: 0.30...1.40 START OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 5.20...5.30 LOWEST RATED SPEED I : (5.15...5.35) Control-lever Contr.-rod trav.mm: 9.00...12.00 position degrees: 66...74 F13

Setting point w/out aux. spring 1/min : 325 Speed Contr.-rod trav.mm: 5.6 Speed 1/min: 325 C-rod trav.mm : 6.00...6.20 : 2.00 C-rod trav.mm 1/min : 420...480 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 hPa : 900 Speed Pressure Contr.-rod trav.mm: 14.90...15.00 Measurement **Speed** 1/min: 500 1st pressure hPa : -: 9.30...9.50 C-rod trav.mm 2nd pressure hPa : 625 C-rod trav.mm : 14.70...14.80 3rd pressure hPa : 250 C-rod trav.mm : 11.30...11.50 ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load tray.mm: 13,90 Speed 1/min : 1190...1200 STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 200.0...240.0 1000H.: (-) LOW IDLE 1/min : 325 Speed Contr.-rod trav.mm: 6.00...6.20 Del.quantity cm3/: 30.0...40.0 1000H.: (27.0...43.0) cm3/:6.00Dispersion 1000H.: (10.00) Remarks: * = Element disconnected at idle for cylinders 2, 4, 6, 8, 10 and 12. Latching at 0.75 bar...0.85 bar.

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set according to engine test report.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1- 2- 9- 10- 5- 6-
                                                                             11- 12- 3- 4- 7- 8
Note inst. in remarks column
                    : MWM 10.8 C
: 05.06.87
Test sheet
                                                      SD ang. spacing CS: 0-30-60-90-120-150-
Edition
Superceeded
                                                                             180-210-240-270-300-
Calibrating oil : ISO-4113
                                                                             330
                                                      Tolerance + - D
                                                                           : 0.50 (0.75)
Combination no.
                    : 0 402 676 804
                                                      BASIC SETTING
Injection pump
Pump designation : PE6P120A520/5RS7142
                                                                    1/mi: 800
                                                      1st speed
E? type number
                   : 0 412 626 820
                                                      Contr.-rod trav.mm: 14.90...15.00
Governor
Governor design. : RSUV325...1150P0A358
Governer no.
                   : 0 421 829 105
                                                      Del.quantity cm3/: 26.0...26.2
                                                                     100H.: (25.8...26.6)
Customer-spec. information
Customer
                   : MWM
                                                                     cm3/:0.5
                                                      Dispersion
                    : D-TBD234V6
Engine
                                                                     100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                      2nd speed
                                                                     1/min: 325.0
Calibrating-oil inlet temp. °C
                                                      Contr.-rod trav. m: 6.0...6.2
                                                      Del.quantity cm3/: 3.0...4.0
100H.: (2.7...4.3)
Dispersion cm3/: 0.6
100H.: (1.0)
3rd speed 1/min: 1100
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                      Contr.-rod trav.mm: 7.00...7.10
Del.quantity cm3/: 1.0...6.0 *
100H.: (-)
Inlet press., bar : 1.50
Calibrating nozzle-holder
 assembly
              : 1 688 901 019
                                                      SLEEVE POSITION
                                                      Control-lever position
Opening
                                                                   Degree: -3
1/min: 800
 pressure, bar
                    : 207...210
                                                      Speed
                                                      Cont.-rod travelmm: 0.30...0.70
Perforated-plate
 diameter mm
                    : 0,8
                                                      Governor-spring reload
                                                      Notch setting x : 4.00
Test inj. tubing : 1 680 750 067
                                                      HIGHEST RATED SPEED
                                                      1st version
Outside diameter
                                                      Control-lever
x Wall thickness
                  : 6.00x1.50x1000
                                                       position degrees: 50...58
x Length mm
(A) Injection pump setting values
                                                      Testing:
                                                      1st c-rod trav.mm : 13.90
Speed 1/min : 1190...1200
2nd c-rod trav.mm : 4.00
    Insp. values in parentheses
Set constant delivery quant.
    per values
                                                                  1/min : 1280...1310
                                                        Speed
                                                      4th speed 1/min : 1440
START OF DELIVERY
Test pressure, bar: 25...27
                                                        C-rod trav.mm : 0.30...1.40
                    : 5.20...5.30
                                                      LOWEST RATED SPEED I
Prestroke mm
                    : (5.15...5.35)
                                                      Control-lever
Contr.-rod trav.mm: 9.00...12.00
                                                       position degrees: 66...74
F15
```

```
Setting point w/out aux. spring
Speed
             1/min : 325
Contr.-rod trav.mm: 5.6
            1/min : 325
Speed
                  : 6.00...6.20
C-rod trav.mm
C-rod trav.mm
                    : 2.00
            1/min : 420...480
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
hPa : 900
Speed
Pressure
Contr.-rod trav.mm: 14.90...15.00
Measurement
             1/min : 500
Speed
1st pressure hPa : -
                    : 9.30...9.50
  C-rod trav.mm
2nd pressure hPa : 625
                    : 14.70...14.80
 C-rod trav.mm
3rd pressure hPa : 250
                    : 11.30...11.50
  C-rod trav.mm
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load tray.mm: 13.90
Speed
            1/min : 1190...1200
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 200.0...240.0
1000H.: (-)
LOW IDLE
Speed
             1/min : 325
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/: 30.0...40.0
1000H.: (27.0...43.0)
             cm3/: 6.00
1000H.: (10.00)
Dispersion
Remarks:
* = Element disconnected at idle for
cylinders 2, 4, 6, 8, 10 and 12. Latching at 0.75 bar...0.85 bar.
```

Unlatching at 0.35 bar...0.45 bar.

Full-load delivery not known. Set according to engine test report.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                   START OF DELIVERY
                                                    Test pressure, bar: 25...27
Note inst. in remarks column
                                                                       : 5.20...5.30
                                                   Prestroke mm
                                                                       : (5.15...5.35)
                   : MB 14.7 G
: 1.9.87
Test sheet
                                                   Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8-7-2-6-3-5-
4-1
Edition
Superceeded
Calibrating oil
                  : ISO-4113
Combination no.
                   : 0 402 678 802
                                                   SD ang. spacing CS: 0-45-90-135-180-225-
Injection pump
Pump designation : PE8P12OA32OLS7801-1
                                                                         270-315
                                                   Tolerance + - D
                                                                       : 0.50 (0.75)
EP type number
                  : 0 412 628 818
Governor
Governor design. : RSV650...1050POA826
                                                   SD mark cyl. no. : 8
Governer no. : 0 421 833 253
                                                   BASIC SETTING
Customer-spec. information
Customer
                  : DAIMLER-BENZ
                                                   1st speed
                                                                  1/mi: 1080
                                                   Contr.-rod trav.mm: 11.60...11.70
Engine
                   : 0M442A
1st version kW : 234.0
                                                   Del.quantity cm3/: 16.3...16.5
Speed
             1/min: 2100
                                                                 100H.: (16.0...16.8)
TEST BENCH REQUIREMENTS
                                                   Dispersion
                                                                 cm3/:0.5
Calibrating-oil inlet temp. °C
                   : 38 . . . 42
                                                                 100H.: (0.9)
Overflow valve
                                                                 1/min: 650.0
                                                   2nd speed
                   : 1 417 413 025
                                                   Contr.-rod trav. m: 4.1...4.3
                                                   Del.quantity cm3/: 1.6...2.2
Inlet press., bar : 1.50
                                                                 100H.: (1.3...2.5)
                                                                 cm3/: 0.8
100H.: (1.2)
                                                   Dispersion
Overflow
 quantity min. 1/h: 100...120
                                                   SLEEVE POSITION
Calibrating nozzle-holder
                                                   Control-lever position
                  : 1 688 901 019
                                                                Degree: -3
1/min: 800
 assembly
                                                   Speed
                                                   Cont.-rod travelmm: 0.30...0.70
Opening
                   : 207...210
 pressure, bar
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
diameter mm
                   : 0.8
                                                   1st version
                                                                 1/min: 1080
                                                   Speed
                                                   Del.quantity cm3/: 163.0...165.0
                                                                1000H.: (160.0...168.0)
Test inj. tubing : 1 680 750 067
                                                                cm3/ : 5.00
                                                   Dispersion
                                                                1000H.: (9.00)
Outside diameter
x Wall thickness
                   : 6.00x1.50x1000
                                                   HIGHEST RATED SPEED
x Length mm
                                                   1st version
                                                   Control-lever
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    position degrees: 34...42
    per values
                                                   Testing:
                                                   1st c-rod trav.mm: 10.60
F17
```

Speed 1/min : 1110...1120 2nd c-rod trav.mm : 4.00 1/min: 1135...1150 Speed 4th speed 1/min: 1400 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 18...26 Setting point w/out aux. spring Speed 1/min: 650 Contr.-rod trav.mm: 4.2 Testing: 1/min : 100 Speed C-rod trav.mm min : 19.50 Speed 1/min: 650 C-rod trav.mm : 4.20 C-rod trav.mm : 2.00 1/min: 650...710 Speed SET IDLE AUXILIARY SPRING Speed 1/min : 2.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1080 C-rod trav.mm : 11.60...11.70 2nd speed 1/min: 900 C-rod trav.mm : 13.20...13.40 3rd speed 1/min : 1000 C-rod trav.mm : 12.40...12.60 FUEL-DELIVERY CHARACTERISTICS 1/min : 900 Speed Del.quantity cm3/: 202.0...206.0 1000H.: (199.0...209.0) cm3/:8.0Dispersion 1000H.: (12.0) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 10.60 Speed 1/min : 1110...1120 STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 200.0...220.0 1000H.: (196.0...224.0) Remarks:

In order to adjust and test the EP combination, set full-load speed regul. at 1110...1120 1/min. Then set speed regul. to 1060...1070 1/min again.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 1- 8- 5- 4- 7- 2-
                                                     Cam sequence
                                                                          3- 6
Note inst. in remarks column
                    : MWM 14,4 C
Test sheet
Edition
                    : 05.06.87
                                                     SD ang. spacing CS: 0-30-90-120-180-210-
                                                                          270-300
Superceeded
                                                     Tolerance + - 0
                                                                         : 0.50 (0.75)
Calibrating oil
                   : ISO-4113
Combination no.
                   : 0 402 678 805
                                                     BASIC SETTING
Injection pump
                                                                   1/mi: 800
                                                     1st speed
Pump designation : PE8P12OA52O/5R$7143
                                                     Contr.-rod trav.mm: 14.90...15.00
EP type number
                   : 0 412 628 820
Governor
Governor design. : RSUV325...1150P0A358
Governer no. : 0 421 829 105
                                                     Del.quantity cm3/: 26.0...26.2
                                                                   100H.: (25.7...26.5)
Customer-spec. information
                                                                   cm3/:0.5
Customer
                   : MWM
                                                     Dispersion
Engine
                    : TBD234V8
                                                                   100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                     2nd speed
                                                                   1/min: 325.0
                                                     Contr.-rod trav. m: 6.0...6.2
                                                     Del.quantity cm3/: 3.0...4.0
100H.: (2.7...4.3)
Dispersion cm3/: 0.6
100H.: (1.0)
3rd speed 1/min: 1100
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                    : 1 417 413 025
                                                     Contr.-rod trav.mm: 6.90...7.10
                                                     Del. quantity cm3/: 1.0...6.0 *
Inlet press., bar: 1.50
                                                                   100H.: (-)
Calibrating nozzle-holder
                : 1 688 901 019
                                                     SLEEVE POSITION
 assembly
                                                     Control-lever position
                                                                  Degree: -3
Opening
 pressure, bar
                   : 207...210
                                                                   17min: 800
                                                     Speed
                                                     Cont.-rod travelmm: 0.30...0.70
Perforated-plate
 diameter mm
                    : 0,8
                                                     Governor-spring reload
                                                     Notch setting x : 4.00
                   : 1 680 750 067
Test in . tubing
                                                     HIGHEST RATED SPEED
                                                     1st version
Outside diameter
                                                     Control-lever
x Wall thickness
                                                      position degrees: 50...58
                   : 6.00x1.50x1000
x Length mm
                                                     Testing:
(A) Injection pump setting values
                                                     1st c-rod trav.mm : 13.90
    Insp. values in parentheses
Set constant delivery quant.
                                                       Speed
                                                                1/min : 1190...1200
                                                     2nd c-rod trav.mm : 4.00
                                                                 1/min: 1280...1310
    per values
                                                     4th speed 1/min: 1440
                                                       C-rod trav.mm : 0.30...1.40
START OF DELIVERY
Test pressure, bar: 25...27
                                                     LOWEST RATED SPEED I
Prestroke mm
                   : 5.20...5.30
                                                     Control-lever
                   : (5.15...5.35)
                                                     position degrees: 16...24
Contr.-rod trav.mm: 9.00...12.00
                                                     Setting point w/out aux. spring
F19
```

```
1/min : 325
Speed
Contr.-rod trav.mm: 5.6
Speed 1/min: 325
C-rod trav.mm
               : 6.00...6.20
                   : 2.00
C-rod trav.mm
            1/min: 420...480
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 900
Pressure
Contr.-rod trav.mm: 14.90...15.00
Measurement
            1/min : 500
Speed
ist pressure hPa : -
                  : 9.30...9.50
 C-rod trav.mm
2nd pressure hPa : 625
  C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
  C-rod trav.mm : 11.30...11.50
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 13.90
Speed
            1/min : 1190...1200
STARTING FUEL DELIVERY
            1/min : 100
Speed
Del.quantity cm3/ : 200.0...240.0
            1000H.: (196.0...244.0)
LOW IDLE
Speed
            1/min : 325
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/: 30.0...40.0
            1000H.: (27.0...43.0)
            cm3/: 6.00
1000H.: (10.00)
Dispersion
Remarks:
* = Element disconnected at idle for
cylinders 2, 4, 6 and 8
Hydraulic latching of starting
delivery.
Latching at 0.75 bar...0.85 bar.
```

F20

Unlatching at 0.25 bar...0.35 bar.

```
: 1- 2- 3- 4- 7- 8-
5- 6
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence
Note inst. in remarks column
Test sheet
                    : MWM 28,8 D
Edition
                    : 05.06.87
                                                       SD ang. spacing CS: 0-30-90-120-225-255-
                                                                              315-345
Superceeded
                                                       Tolerance + - 0
Calibrating oil
                    : ISO-4113
                                                                            : 0.50 (0.75)
Combination no.
                    : 0 402 678 806
                                                       BASIC SETTING
                                                                       1/mi: 800
Injection pump
                                                       1st speed
Pump designation : PE8P120A520/5RS7145
                                                       Contra-rod trav.mm: 14.90...15.00
EP type number
                    : 0 412 628 820
Governor
                                                       Del.quantity cm3/ : 26.0...26.2
Governor design. : RSUV325...1150P0A358
                   : 0 421 829 105
Governer no.
                                                                      100H.: (25.7...26.5)
Customer-spec. information
                                                                      cm3/:0.5
Customer
                    : MWM
                                                       Dispersion
Engine
                    : TBD234V16
                                                                      100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                       2nd speed
                                                                      1/min: 325.0
                                                       Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/: 3.0...4.0

100H.: (2.7...4.3)

Dispersion cm3/: 0.6

100H.: (1.0)

3rd speed 1/min: 1100

Contr.-rod trav. mm: 6.90. 7.10
Calibrating-oil inlet temp. C
                    : 38...42
Overflow valve
                     : 1 417 413 025
                                                       Contr.-rod trav.mm: 6.90...7.10
                                                       Del.quantity cm3/: 1.0...6.0 *
Inlet press., bar : 1.50
                                                                      100H.: (-)
Calibrating hozzle-holder
                : 1 688 901 019
                                                       SLEEVE POSITION
 assembly
                                                       Control-lever position
Opening
                                                                     Degree: -3
pressure, bar
                                                                      17min: 800
                    : 207...210
                                                       Speed
                                                       Cont.-rod travelmm: 0.30...0.70
Perforated-plate
 diameter mm
                    : 0,8
                                                       Governor-spring reload
                                                       Notch setting x : 4.00
Test inj. tubing
                    : 1 680 750 067
                                                       HIGHEST RATED SPEED
                                                       ist version
Outside diameter
                                                       Control-lever
x Wall thickness
                                                        position degrees: 50...58
                    : 6.00X1.50X1000
x Length mm
                                                       Testing:
(A) Injection pump setting values
                                                       1st c-rod trav.mm : 13.90
    Insp. values in parentheses
Set constant delivery quant.
                                                         Speed 1/min: 1190...1200
                                                       2nd c-rod trav.mm: 4.00
Speed 1/min: 1280...1310
4th speed 1/min: 1440
    per values
                                                         C-rod tray.mm : 0.30...1.40
START OF DELIVERY
Test pressure, bar: 25...27
                                                       LOWEST RATED SPEED I
                    : 5.20...5.30
                                                       Control-lever
Prestroke mm
                    : (5.15...5.35)
                                                        position degrees: 16...24
Contr.-rod trav.mm: 9.00...12.00
                                                       Setting point w/out aux. spring
```

```
Speed
             1/min : 325
Contr.-rod trav.mm: 5.6
Speed 1/min: 325
                 : 6.00...6.20
C-rod trav.mm
C-rod trav.mm
                    : 2.00
Speed
            1/min : 420...480
 compensator (LDA,ADA,ALDA)
1st version
Setting
             1/min : 500
Speed
             hPa : 900
Pressure
Contr.-rod trav.mm: 14.90...15.00
Measurement
             1/min : 500
Speed
1st pressure hPa : -
                    : 9.30...9.50
  C-rod trav.mm
2nd pressure hPa : 625
  C-rod trav.mm : 14.70...14.80
3rd pressure hPa : 250
  C-rod trav.mm
                   : 11.30...11.50
ROTATIONAL-SPEED LIBITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 13.90
Speed
             1/min: 1190...1200
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 200.0...240.0
1000H.: (196.0...244.0)
LOW IDLE
             1/min : 325
Speed
Contr.-rod trav.mm: 6.00...6.20
Del.quantity cm3/: 30.0...40.0
             1000H.: (27.0...43.0)
             cm3/: 6.00
1000H.: (10.00)
Dispersion
Remarks:
* = Element disconnected at idle for
cylinders 2, 4, 6 and 8
Hydraulic latching of starting
delivery.
Latching at 0.75 bar...0.85 bar.
```

F22

Unlatching at 0.25 bar...0.35 bar.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                         Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test_sheet
                    : MB 6.0 D 30
: 24.07.87
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition
Superceeded
Calibrating oil : ISO-4113
                                                        BASIC SETTING
Combination no.
                     : 0 403 446 145
                                                         1st speed
                                                                         1/mi: 1300
Injection pump
Pump designation : PES6MW100/720RS1114-
                                                        Contr.-rod trav.mm: 11.00...11.10
                                                        Del.ouantity cm3/ : 7.7...7.9
EP type number
                     : 0 413 406 111
Governor
Governor design. : RQV300...1300MW48
                                                                        100H.: (7.5...8.1)
Governer no.
                    : 0 420 083 066
                                                                        cm3/:0.3
                                                        Dispersion
Customer-spec. information
                                                                        100H.: (0.6)
Customer
                                                        2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/: 0.9...1.3
                     : OM 366 A
Engine
1st version kW : 125.0
                                                                       100H.: (0.8...1.4)
cm3/: 0.3
100H.: (0.5)
               1/min: 2600
Speed
                                                        Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                         (B) Setting of injection pump with externally-mounted governor
                     : 38...42
Overflow valve
                                                        SLEEVE TRAVELS
                     : 1 417 413 000
                                                        1st speed 1/min: 1340
                                                        Steeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
Steeve travel mm: 9.30...9.70
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                        3rd speed 1/min: 500
                    : 0 681 434 009
 assembly
                                                           Sleeve travel mm: 2.70...3.30
                                                        4th speed 1/min: 300
                                                           Sleeve travel mm: 1.20...1.70
Opening
 pressure, bar
                    : 172...175
                                                        SLEEVE POSITION
                                                        Control-lever position
                                                                      Degree: -1
1/min: 1330
                    : 1 680 750 015
Test in i. tubing
                                                        Cont.-rod travelmm: 15.20...17.80
Outside diameter
x Wall thickness
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
                     : 6,00x1,50x600
x Length mm
(A) Injection pump setting values
                                                        1st version
                                                        Speed 1/min: 1300
Del.quantity cm3/: 77.0...79.0
1000H.: (75.0...81.0)
Dispersion cm3/: 3.50
1000H.: (6.00)
    Insp. values in parentheses
    Set constant delivery quant.
    per values
START OF DELIVERY
Test pressure, bar: 30...32
                                                        HIGHEST RATED SPEED
Prestroke mm
                    : 3.70...3.80
                                                        1st version
                     : (3.65...3.85)
F23
```

Control-lever position degrees: 48...56 Testing: 1st c-rod trav.mm : 10.00 Speed 1/min: 1340...1350 2nd c-rod trav.mm : 4.00 1/min: 1430...1460 Speed 4th speed 1/min: 1520 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 14...22 Setting point w/out aux. spring 1/min : 300 Contr.-rod trav.mm: 7.8 Testing: 1/min : 100 Speed C-rod trav.mm min : 9.40 Speed 1/min : 300 C-rod trav.mm : 7.80...7.90 : 2.00 C-rod trav.mm 1/min : 500...560 Speed CONSTANT REGULATION 1/min : 330...600 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1300 1st speed : 11.00...11.10 C-rod trav.mm 2nd speed 1/min: 700 C-rod trav.mm : 12.10...12.20 3rd speed 1/min : 720 C-rod trav.mm : 12.10...12.20 1/min : 800 4th speed C-rod trav.mm : 11.80...12.00 5th speed 1/min: 900 : 11.40...11.70 C-rod trav.mm SWITCH-OVER POINT 1/min : 230 (250) Speed FUEL-DELIVERY CHARACTERISTICS 1/min : 700 Speed Del.quantity cm3/: 75.5...78.5 1000H:: (73.0...79.0) Dispersion cm3/: 5.00 1000H.: (7.00) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 10.00 Speed 1/min : 1340...1350

F24

STARTING FUEL DELIVERY

LOW IDLE

Speed 1/min: 300 Contr.-rod trav.mm: 7.80...7.90 Del.quantity cm3/: 9.0...13.0 1000H.: (8.0...14.0) Dispersion cm3/: 3.50

1000H.: (5.00)

Note inst. in remarks column

Test sheet Edition Superceeded : MB 6.0 D 17 : 24.07.87

Calibrating oil : ISO-4113

Combination no. : 0 403 446 150

Injection pump

Pump designation : PES6MW100/720RS1120

EP type number : 0 413 406 112

Governor

Governor design. : RQV300...1300MW59 Governer no. : 0 420 083 077

Customer-spec. information Customer : MBB

Engine : 0M 366 LA

1st version kW : 141.7 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 30...32

: 3.50...3.60 Prestroke mm

: (3.45...3.65) Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4	Control-lever position degrees: 4856
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) BASIC SETTING 1st speed 1/mi: 1300	Testing: 1st c-rod trav.mm : 11.10 Speed 1/min : 13401350 2nd c-rod trav.mm : 4.00 Speed 1/min : 14501480 4th speed 1/min : 1530 C-rod trav.mm : 0.001.00
	LAUCAT DATED ADEED T
Contrrod trav.mm: 12-0012.10	LOWEST RATED SPEED I Control-lever
Del.quantity cm3/: 8.658.85	position degrees: 1624
100H.: (8.4590.5)	Setting point w/out aux. spring Speed 1/min : 300 Contrrod trav.mm: 6.1
Dispersion cm3/: 0.3	
100H.: (0.6)	Testing: Speed 1/min : 100 C-rod trav.mm min : 8.00
2nd speed 1/min: 300.0 Contrrod tray. m: 6.16.2 Contrrod tray. m: 6.16.2	Speed 1/min : 300 C-rod trav.mm : 6.106.20
Del.quantity cm3/: 1.051.45 100H.: (0.81.6) Dispersion cm3/: 0.3 100H.: (0.5)	CONSTANT REGULATION Speed 1/min : 320550
(B) Setting of injection pump with I externally-mounted governor	compensator (LDA,ADA,ALDA)
SLEEVE TRAVELS 1st speed 1/min: 1340 Sleeve travel mm: 8.508.60 2nd speed 1/min: 800 Sleeve travel mm: 4.404.80 3rd speed 1/min: 500	1st version Setting Speed 1/min: 500 Pressure hPa: 260 Contrrod trav.mm: 11.0011.10 Measurement
Sleeve travel mm: 2.703.30 1 4th speed 1/min: 300 1	Speed 1/min: 500
Sleeve travel mm: 1.201.70 SLEEVE POSITION Control-lever position Degree: -1 Speed 1/min: 1340 Controd travelmm: 15.2017.80	1st pressure hPa : 700 C-rod trav.mm : 12.0012.10 2nd pressure hPa : - C-rod trav.mm : 10.8010.90 3rd pressure hPa : 310 C-rod trav.mm : 11.8012.10
1	SWITCH-OVER POINT
FULL-LOAD DELIV. AT FULL-LOAD STOP	Speed 1/min : 230 (250)
1st version Speed 1/min: 1300 Charge press. hPa: 700 Del.quantity cm3/: 86.588.5	FUEL-DELIVERY CHARACTERISTICS
1000H.: (84.590.5) Dispersion cm3/: 3.50 1000H.: (6.00)	1st version Charge press. hPa : 700 Speed 1/min : 750 Del quantity cm3/ : 74 5 78 5
HIGHEST RATED SPEED 1st version	Del.quantity cm3/: 74.578.5 1000H.: (72.080.0) Dispersion cm3/: 5.00 1000H.: (7.00)

Note inst. in remarks column

Test sheet : MB 6,0 D 20 Edition : 24.07.87 Superceeded : 10.04.87 Calibrating oil : ISO-4113

Combination no. : 0 403 446 177

Injection pump

Pump designation : PES6MW100/72ORS1139 EP type number : 0 413 406 134

Governor

Governor design. : RQV300...1300MW48 Governor no. : 0 420 083 066

Customer-spec. information Customer : MBB

£ngine : 0M366A

1st version kW : 125.0 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70,..3.80

: (3.65...3.85) Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-2-4 Testing: 1st c-rod trav.mm: 10.00 Speed 1/min: 1340...1350 2nd c-rod trav.mm: 4.00 SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) 1/min: 1425...1455 4th speed 1/min: 1550 BASIC SETTING C-rod tray.mm : 0.00...1.00 1/mi: 1300 LOWEST RATED SPEED I 1st speed Control-lever Contr.-rod trav.mm: 11.00...11.10 position degrees: 18...26 Setting point w/out aux. spring Del.quantity cm3/: 8.2...8.4 1/min : 300 Contra-rod trav.mm: 7.8 100H.: (8.0...8.6) Testing: Speed 1/min: 100 C-rod trav.mm min: 8.70 Speed 1/min: 300 C-rod trav.mm: 7.80...7.90 Dispersion cm3/: 0.3100H.: (0.6) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.8...7.9 CONSTANT REGULATION Del.quantity cm3/: 1.0...1.4 100H.: (0.9...1.5) Dispersion cm3/: 0.3 100H.: (0.5) 1/min : 330...500 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1300 C-rod trav.mm: 11.00...11.10 (B) Setting of injection pump with externally-mounted governor 2nd speed 1/min: 800 C-rod trav.mm : 11.80...12.00 3rd speed 1/min: 585 SLEEVE TRAVELS 1st speed 1/min: 1340 C-rod trav.mm : 12.00...12.20 Sleeve travel mm: 8.50...8.70 2nd speed 1/min: 1450 Sleeve travel mm: 9.30...9.70 4th speed 1/min: 1100 C-rod trav.mm: 11.00...11.10 3rd speed 1/min: 500 SWITCH-OVER POINT Sleeve travel mm: 2.70...3.30 4th speed 1/min: 300 1/min : 230 (250) Speed Sleeve travel mm: 1.20...1.70 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 800
Del.quantity cm3/: 81.0...83.0
1000H:: (79.0...85.0)
Dispersion cm3/: 5.00 SLEEVE POSITION Control-lever position Degree: -1 1/min: 1350 Speed 1000H.: (7.00) Speed 1/min: 585 Del.quantity cm3/: 77.5...80.5 1000H.: (75.0...83.0) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1300 ROTATIONAL-SPEED LIMITATION Speed Del.quantity cm3/: 82.0...84.0 1000H.: (80.0...86.0) 1st version Dispersion cm3/ : 3.50 1mm control-rod travel less than 1000H.: (6.00) full-load trav.mm: 10.00 1/min : 1340...1350 HIGHEST RATED SPEED Speed 1st version Control-lever STARTING FUEL DELIVERY position degrees: 50...58 G01

LOW IDLE

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition : MB 6,0 D 28

: 10.04.87 Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 403 446 188

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0 413 406 138 Governor

Governor design. : RQV300...1300MW48-4 Governer no. : 0 420 083 126

Customer-spec. information : DB Customer

: 0M366A Engine

1st version kW : 100.0 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter x Wall thickness

: 6.00X2.00X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 30...32

: 3.70...3.80 Prestroke mm

: (3.65...3.85) Contr.-rod trav.mm; 19.00...21.00

```
Cam sequence : 1-5-3-6-2-4
                                                            Testing:
                                                            1st c-rod trav.mm: 9.10
                                                            Speed 1/min: 1340...1350
2nd c-rod trav.mm: 4.00
SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                            Speed 1/min: 1390...1420
4th speed 1/min: 1550
BASIC SETTING
                                                              C-rod trav.mm : 0.00...1.00
             1/mi: 1300
                                                            LOWEST RATED SPEED I
1st speed
                                                            Control-lever
Contr.-rod trav.mm: 10.10...10.20
                                                             position degrees: 18...26
                                                            Setting point w/out aux. spring
Del.quantity cm3/ : 6.8...7.0
                                                                          1/min : 300
                                                            Contr.-rod trav.mm: 7.35
                100H.: (6.6...?.2)
                                                            Testing:
Dispersion
                cm3/: 0.35
                                                                          1/min : 100
                                                            Speed
                                                            C-rod trav.mm min: 9.30
                                                           Speed 1/min: 300
C-rod trav.mm : 7.30...7.40
                100H.: (0.6)
2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.3...7.4
Del.quantity cm3/: 1.0...1.4
100H.: (0.9...1.5)
                                                            CONSTANT REGULATION
                                                                          1/min: 330...500
                                                            Speed
                cm3/: 0.35
100H.: (0.5)
Dispersion
                                                            TORQUE CONTROL
                                                            Torque-control curve - 1st version
                                                           1st speed 1/min: 1300
C-rod trav.mm: 10.10...10.20
2nd speed 1/min: 750
(B) Setting of injection pump with
     externally-mounted governor
                                                              C-rod trav.mm : 11.10...11.20
                                                            3rd speed 1/min : 600
SLEEVE TRAVELS
1st speed 1/min: 1340
                                                              C-rod trav.mm : 11.10...11.20
  Sleeve travel mm: 8.50...8.70
                                                            4th speed 1/min: 900
2nd speed 1/min: 1450
Sleeve travel mm: 9.30...9.70
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
                                                              C-rod trav.mm : 10.70...10.90
                                                            SWITCH-OVER POINT
                                                                          1/min : 230 (250)
                                                            Speed
  Sleeve travel mm: 1.20...1.70
                                                            FUEL-DELIVERY CHARACTERISTICS
SLEEVE POSITION
                                                                          1/min : 750
                                                            Speed
                                                           Del.quantity cm3/: 69.5...72.5
1000H.: (67.0...75.0)
Dispersion cm3/: 5.00
Control-lever position
              Degree: -1
1/min: 1350
Speed
Cont.-rod travelmm: 15.20...17.80
                                                                          1000H.: (7.00)
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                            ROTATIONAL-SPEED LIMITATION
1st version
                                                            1st version
Speed
                1/min: 1300
                                                            1mm control-rod travel less than
Del.quantity cm3/: 68.0...70.0
1000H: (66.0...72.0)
Dispersion cm3/: 3.50
                                                             full-load trav.mm: 9.10
                                                                          1/min : 1340...1350
                                                            Speed
              1000H.: (6.00)
                                                            STARTING FUEL DELIVERY
HIGHEST RATED SPEED
1st version
Control-lever
                                                           Speed 1/min: 100
 position degrees: 50...58
G04
```

Del.quantity cm3/: 80.0...90.0 1000H.: (77.0...93.0) Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

```
Note inst. in remarks column
Test sheet
                   : MWM 5,9 G
                  : 5.3.87
Edition
Superceeded
Calibrating oil : ISO 4113
Combination no. : 9 400 085 285
Injection pump
Pump designation : PES6A90D3207S2727
EP type number : 9 400 084 097
Governor
Governor design. : RSV350...1250A0B1108
Governer no. : 9 420 083 223
Customer-spec. information
                  : MWM
Customer
                  : D229-6
Engine
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C : 38...42
Overflow valve
                   : 1 417 413 046
Inlet press., bar : 1.0
Calibrating nozzle-holder
             : 0 681 343 009
 assembly
Opening |
pressure, bar : 172...175
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
x Length mm
                  : 6.00x2.00x600
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values
START OF DELIVERY
Test pressure, bar: 25...27
Prestroke mm : 2.70...2.80
                  : (2.65...2.85)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4
```

```
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75)
SD mark cyl. no. : 1
START OF DELIVERY DIFFERENCE
betw.c-rod trav.mm: 9.00...12.00
& c-rod tray max. : 21.00
Difference CS : 3...4
BASIC SETTING
1st speed
                 1/mi: 1200
Contr.-rod trav.mm: 9.10...9.20
Del.quantity cm3/: 62.5...63.5
                100H.: (60.5...65.5)
                cm3/:3.0
Dispersion
                100H.: (5.0)
                1/min: 350
2nd speed
Contr.-rod trav. m: 5.90...6.10
Del.quantity cm3/: 1.1...1.5
100H.: (0.9...1.7)
Dispersion cm3/: 0.25
100H.: (0.45)
SLEEVE POSITION
Control-lever position
              Degree: -3
               17min: 800
Speed
Cont.-rod travelmm: 0.30...1.00
Governor-spring reload Notch setting x : 4.0
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
                1/min: 1200
Speed
Del.quantity cm3/: 62.5...63.4
1000H:: (60.5...65.5)
Dispersion cm3/: 3.0
              1000H.: (5.0)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 50...58
Testing:
1st c-rod trav.mm: 8.10
  Speed 1/min: 1240...1250
2nd c-rod trav.mm : 4.00
```

G07

Speed 1/min : 1300...1330 4th speed 1/min: 1450 : 0.30...1.70 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 25...33 Setting point w/out aux. spring 1/min : 350 Contr.-rod trav.mm: 5.50 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.00 Speed 1/min: 350 C-rod trav.mm : 5.90...6.10 C-rod trav.mm : 2.00 Speed 1/min : 510...570 TORQUE CONTROL Dimension a mm : 1200 9 Torque-control curve - 1st version 1st speed 1/min: .10.. C-rod trav.mm: .9.20 500 9 2nd speed 1/min: .60.. C-rod trav.mm : .9.70 800 9 3rd speed 1/min : .30.. C-rod trav.mm : .9.60 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 500 1/min : 52.0. Del.quantity cm3/: ..54.0 (49.5

Charge press. hPa: 500
Speed 1/min: 52.0.
Del.quantity cm3/:..54.0 (49.5
1000H.:..56.5)
Charge press. hPa: 800
Speed 1/min: 59.5.
Del.quantity cm3/:..61.5 57.0.
1000H.:..64.0

```
SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0,50 (0,75)
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                       BASIC SETTING
                    : DEE 6.6 D
: 17.8.87
Test sheet
Edition
                                                       1st speed 1/mi: 1200
Superceeded
Calibrating oil
                    : ISO-4113
                                                       Contr.-rod trav.mm: 8,80
Combination no.
                    : 9 400 230 006
                                                       Del.quantity cm3/ : 8,4...8,6
Injection pump
                                                                      100H.: (-)
                    : PES6A95D410RS2559
Pump designation
Governor
                                                       Dispersion
                                                                      cm3/:0.3
Governor design.
                    : RSV400...1200A2B2043
                                                                      100H.: (-)
Customer-spec. information
                                                                      1/min: 400
                                                       2nd speed
                                                       Contr.-rod trav. m: 5,20
Del.quantity cm3/: 1,1...1,5
100H: (-)
Dispersion cm3/: 0,3
Customer
                    : JOHN DEERE
Engine
                     : 6404 T
TEST BENCH REQUIREMENTS
                                                                      100H.: (-)
Calibrating-oil inlet temp. °C
                                                       SLEEVE POSITION
                    : 40...45
                                                       Control-lever position
                                                                     Degree: -3
                                                                      17min: 800
Overflow valve
                                                       Speed
                     : 1 423 385 907
                                                       Cont.-rod travelmm: 0.30...0.70
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.5
Calibrating nozzle-holder
                                                       1st version
                   : 0 681 343 009
 assembly
                                                       Speed
                                                                      1/min: 1200
                                                       Del.quantity cm3/: 84,0...86,0
1000H.: (81,0...89,0)
Opening
 pressure, bar : 172...175
                                                       HIGHEST RATED SPEED
                                                       1st version
                   : 1 680 750 008
Test inj. tubing
                                                       Control-lever
                                                        position degrees: 44...52
Outside diameter
x Wall thickness
                                                       Testing:
                                                       1st c-rod trav.mm : 7.80
Speed 1/min : 1245...1255
x Length mm
                    : 6,35x2,00x600
                                                       2nd c-rod trav.mm: 4.00
Speed 1/min: 1290...1320
4th speed 1/min: 1400
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values
                                                         C-rod trav.mm : 0,30...1,70
START OF DELIVERY
                                                       LOWEST RATED SPEED I
Test pressure, bar: 1,85...1,95
                                                       Control-lever
Date of mfg. : (1,80...2
                                                        position degrees: 18...26
                                                       Setting point w/out aux. spring
                    : ,00) 10,50
                                                                    1/min : 400
Prestroke mm
                       1-5-3-6-2-4
                                                       Contr.-rod trav.mm: 4,70
                                                       Testing:
                                                                     1/min : 100
                                                       Speed
                                                       C-rod trav.mm min : 19.00
```

```
1/min : 400
Speed
C-rod trav.mm : 5.10...5,30
C-rod trav.mm : 2,00
            1/min : 585...645
Speed
TORQUE CONTROL
Dimension a mm
                  : 1200 8
Torque-control curve - 1st version
1st speed 1/min: ,80
                                800 9
  C-rod trav.mm
2nd speed 1/min: 30...
  C-rod trav.mm : .9,50
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 800
             1/min : 88,0.
Speed
Del.quantity cm3/: ..92,0
                                 (86,0
             1000H.: ...94,0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 7,80
            1/min : 1245...1255
Speed
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 160,0...180,0
             1000H.: (-)
Contr.-rod trav.mm: 21,00
HIGH IDLE
1st version
Charge press. hPa : 1295
             1/min : 4,50
Speed
                                 21,8.
Contr.-rod trav.mm:
Del.quantity cm3/: ..31,8
LOW IDLE
Speed
             1/min : 400
Del.quantity cm3/ : 11,0...15,0
             1000H.: (-)
Remarks:
Start-of-delivery mark at 14^{\circ} angular displacement of the cam after start of
delivery of cylinder 1 with control-rod travel = 10.50 mm.
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                1/mi: 1100
                                                   1st speed
Note inst. in remarks column
                                                   Contr.-rod trav.mm: 10.15....10.25
                   : DEE 7.6 J 3
                                                   Del.quantity cm3/: 9.55...9.75
Test sheet
                   : 26.2.87
Edition
Superceeded
                                                                100H.: (-)
Calibrating oil
                  : ISO-4113
                                                   Dispersion
                                                                cm3/:0.3
Combination no.
                  : 9 400 230 011
                                                                100H.: (-)
Injection pump
Pump designation : PES6A95D41ORS2561
                                                   SLEEVE POSITION
Governor
                                                   Control-lever position
                  : RSV600...1100AZB
                                                               Degree: -3
1/min: 800
Governor design.
                     2048L
                                                   Cont.-rod travelmm: 0.30...0.70
Customer-spec. information
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
Customer
                  : JOHN DEERE
                   : 6466 TH 01
Engine
                                                   1st version
                                                                1/min: 1100
                                                   Speed
                                                   Del.quantity cm3/: 95.5...97.5
1000H.: (93.5...99.5)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                   : 38...42
                                                   HIGHEST RATED SPEED
                                                   1st version
Overflow valve
                                                   Control-lever
                   : 1 680 750 008
                                                   position degrees: 41...49
Inlet press., bar : 1.5
                                                   Testing:
                                                   1st c-rod trav.mm : 9.20
Calibrating nozzle-holder
                                                              1/min : 1145...1150
                                                     Speed
                 : 0 681 343 009
 assembly
                                                   2nd c-rod trav.mm : 4.0
                                                     Speed 1/min: 1215...4.0
                                                   3rd c-rod trav.mm : 0.30...1.70
Opening
pressure, bar : 172...175
                                                              1/min : 1300
                                                     Speed
                                                   LOWEST RATED SPEED I
Test inj. tubing : 1 680 750 008
                                                   Control-lever
                                                   position degrees: 24...32
(A) Injection pump setting values
                                                   Setting point w/out aux. spring
    Insp. values in parentheses
Set constant delivery quant.
                                                   Speed 1/min : 600
                                                   Contr.-rod trav.mm: 4.80
    per values
                                                   Testing:
START OF DELIVERY
                                                   Speed
                                                               1/min : 100
Test pressure, bar: 1.85...1.95
                                                   C-rod trav.mm min : 19.0
Date of mfg.
                : (1.80...2
                                                  C-rod trav.mm : 2.0
                                                               1/min: 730...790
                                                   Speed
                  : .00) 10.50
                                                              1/min : 850
Prestroke mm
                                                   Speed
                   : 1-5-3-6-2-4
                                                   C-rod trav.mm max: 1.0
                                                   ROTATIONAL-SPEED LIMITATION
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75)
                                                   1st version
                                                   1mm control-rod travel less than
BASIC SETTING
                                                    full-load trav.mm: 9.20
                                                   Speed 1/min: 1145...1155
G11
```

STARTING FUEL DELIVERY

HIGH IDLE

1st version

Charge press. hPa: 1200 Contr.-rod trav.mm: 19.0. Del.quantity cm3/:..29.0 (-)

LOW IDLE

Speed 1/min : 600
Del.quantity cm3/ : 12.0...16.0

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                   SD ang. spacing<sup>0</sup>CS: 0-45-90-135-180-225-
Note inst. in remarks column
                                                                        270-315
Test sheet
                                                   Tolerance + - \circ : 0.50(0.75)
                   : IHC 9.0 F 4 : 11.3.87
Edition
Superceeded
                                                   BASIC SETTING
Calibrating oil : ISO-4113
                                                   1st speed
                                                                1/mi: 1500
Combination no.
                  : 9 400 230 017
                                                   Contr.-rod tray.mm: 9.30...9.40
Injection pump
Pump designation : PES8A75D32OR2463
                                                   Del.quantity cm3/: 4.9...5.1
Governor
                   : RQV300...1500AB1060
                                                                 100H.: (-)
Governor design.
                                                   2nd speed
                                                                 1/min: 300
Customer-spec. information
                                                   Contr.-rod trav. m: 6.00
                                                   Del.quantity cm3/: 1.7...2.1**
100H.: (-)
Customer
                  : IHC
                   : DV 550 C
Engine
                                                   SLEEVE POSITION
TEST BENCH REQUIREMENTS
                                                   Control-lever position
                                                                Degree: 65...71
Calibrating-oil inlet temp. C
                                                   Speed
                                                                 1/min: 1600
                   : 38...42
                                                   Cont.-rod travelmm: 15.00...18.50
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
Overflow valve
                   : 1 417 413 019
                                                   1st version
                                                                 1/min: 1500
Inlet press., bar : 2.4
                                                   Speed
                                                   Del.quantity cm3/: 49.0...51.0
                                                                1000H.: (-)
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                   HIGHEST RATED SPEED
Opening
                                                   1st version
pressure, bar : 172...175
                                                   Control-lever
                                                    position degrees: 64...72
Test inj. tubing : 9 681 230 702
                                                   Testing:
                                                   1st c-rod trav.mm: 9...14
                                                     Speed 1/min: 1700
Qutside diameter
x Wall thickness
                                                   3rd c-rod trav.mm : 3.00...9.50
x Length mm : 6.00x2.00x600
                                                              1/min : 1800
                                                     Speed
                                                   4th speed
                                                               1/min : 2000
                                                     C-rod trav.mm : 0...0.10
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                   LOWEST RATED SPEED I
    per values ____
                                                   Control-lever
                                                    position degrees: 6...14
START OF DELIVERY
Test pressure, bar: 1.95...2.00★
                                                   Testing:
Date of mfg. : (1.90...1
                                                                1/min : 200
                                                   Speed
                                                   C-rod trav.mm min: 8.20
Prestroke mm : .95) 10.70
Contr.-rod trav.mm: 3.95...4.0**(
                                                              1/min : 300
                                                   Speed
                                                   C-rod trav.mm : 5.40...7.30
C-rod trav.mm : 3.05
Date of mfg. : 3.90...4.05
                       1-8-7-3-6-5-
                                                               1/min : 450
                                                   Speed
Contr.-rod trav.mm: 4-2
                                                               1/min : 600
                                                   Speed
                                                   C-rod trav.mm max: 2.60
G13
```

```
Speed 1/min: 870
C-rod trav.mm : 0.10
TORQUE CONTROL
Dimension a mm : 1500 9
Torque-control curve - 1st version
           1/min : .35
1st speed
                               1000 9
  C-rod trav.mm
2nd speed 1/min : .80..
  C-rod trav.mm : .10.00
                               700 9
3rd speed 1/min: .80..
  C-rod trav.mm : .10.00
SWITCH-OVER POINT
            1/min : 150...230
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1000
            1/min : 46.0.
Speed
Del.quantity cm3/: ..49.0
Charge press. hPa: 300
Speed 1/min: 1.0..
                                (-)
Del.quantity cm3/: .15.0*
Charge press. hPa: 300
Speed 1/min: 36.0.
                                (-)
Del.quantity cm3/: ..46.0**
                                (-)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 8.35
            1/min : 1605...1615
Speed
STARTING FUEL DELIVERY
LOW IDLE
Speed
            1/min : 300
Del.quantity cm3/: 17.0...21.0
1000H.: (-)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        $D ang. spacing ^{0} CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.5(0.75)
Note inst. in remarks column
                    : DEE_10,1 AS
Test sheet
                                                        SD mark cyl. no. : 1
                    : 9.87
: 4.3.87
Edition
Superceeded
                                                        BASIC SETTING
Calibrating oil : ISO-4113
                                                                       1/mi: 1050
                                                        ist speed
Combination no.
                    : 9 400 231 006
                                                        Contr.-rod trav.mm: 12.20
Injection pump
Pump designation : PES6P110A720RS370
                                                        Del.quantity cm3/: 17.2...17.4
Governor
Governor design.
                    : R$V400...1050P0/450
                                                                       100H.: (16.9...17.7)
                                                        Dispersion
                                                                      cm3/:0.4
                    : AR 88761
Cust. part no.
                                                                       100H.: (-)
Customer-spec. information
Customer
                    : JOHN DEERE
                                                                      1/min: 400
                                                        2nd speed
                                                       Contr.-rod trav. m: 6.40
Del.quantity cm3/: 1.9...2.5
100H.: (-)
                     : 6619 A
Engine
TEST BENCH REQUIREMENTS
                                                        SLEEVE POSITION
Calibrating-oil inlet temp. C
                                                        Control-lever position
                    : 38...42
                                                                     Degree: -3
                                                                      17min: 800
Overflow valve
                                                        Cont.-rod travelmm: 0.30...1.40
                     : 1 457 413 010
                                                        Governor-spring reload
Inlet press., bar : 1.50
                                                       Notch setting x :?
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                        1st version
                                                       Speed 1/min: 1050
Charge press. hPa: 1200
Del.quantity cm3/: 172.0...174.0
1000H.: (169.0...177.0)
Opening
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
                                                                     cm3/ : 4.0
                                                        Dispersion
                                                                     1000H.: (-)
Outside diameter
                                                       HIGHEST RATED SPEED
x Wall thickness
                    : 6,00x1,50x600
                                                       1st version
x Length mm
                                                       Control-lever
(A) Injection pump setting values
                                                        position degrees: 36...44
    Insp. values in parentheses
Set constant delivery quant.
                                                        Testing:
    per values
                                                        1st c-rod trav.mm : 11.20
                                                          Speed 1/min: 1100
START OF DELIVERY
                                                       2nd c-rod trav.mm: 6.20
                                                          Speed
                                                                    1/min : 1150
Prestroke mm
                    : 2.75...2.85
                    : (2.70...2.90)
                                                       LOWEST RATED SPEED I
Contr.-rod trav.mm: 12.20
                                                       Control-lever
                                                       position degrees: 15...23
Setting point w/out aux. spring
Speed 1/min: 400
Cam sequence : 1-5-3-6-2-4
G15
```

```
Contr.-rod trav.mm: 6.40
                                              į
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 19.00
Speed 1/min: 400
                : 6.30...6.50
C-rod trav.mm
                  : 2.00
C-rod trav.mm
            1/min : 520...580
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1050
  C-rod trav.mm : 12.20
2nd speed 1/min: 650
  C-rod trav.mm : 12.60
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min: 800
Speed
            hPa : 530
Pressure
Contr.-rod trav.mm: 11.65...11.75
Measurement
Speed
            1/min : 800
1st pressure hPa : 270
  C-rod trav.mm : 9.60...10.00
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1200
Speed 1/min: 650
Del.quantity cm3/: 177.4...180.4
1000H.: (174.4...183.4)
Charge press. hPa : -
            1/min : 550
Speed
Del.quantity cm3/: 84.0...92.0
            1000H.: (81.0...95.0)
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 170.0
1000H.: (-)
HIGH IDLE
            1/min : 1150
Speed
Del.quantity cm3/: 47.0...57.0
            1000H.: (-)
LOW IDLE
Speed
            1/min : 400
```

G16

Del.quantity cm3/: 19.0...25.0 1000H.: (-)

Remarks:

: JOHN DEERE NO.

: AR 88761

Start-of-delivery mark is at 15° angular displacement of the cam after start of delivery at cylinder 1 with control-rod travel 9.00...12.00 mm

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       START OF DELIVERY
                                                       Test pressure, bar: 25...27
Note inst. in remarks column
                                                                           : 3.60...3.70
                                                       Prestroke mm
                                                                           : (3.55...3.75)
Test sheet
                    : MB 11,0 L 3
                    : 28.08.87
Edition
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 6- 3- 5- 2- 4- 1
Superceeded
                    : ISO-4113
Calibrating oil
Combination no.
                    : 0 401 846 832
                                                       SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
Injection pump
Pump designation
                    : PE6P120A320L$3815-12
EP type number
                    : 0 411 826 770
                                                       SD mark cyl. no. : 6
Governor
Governor design. : RQ300/1050PA840-1
                                                       BASIC SETTING
Governer no.
                    : 0 421 801 418
                                                                      1/mi: 600
                                                       1st speed
Customer-spec. information
                                                       Contr.-rod trav.mm: 13.10...13.30
Customer
                    : DAIMLER-BENZ
                    : OM 441 A
Engine
                                                       Del.quantity cm3/: 19.0...19.2
1st version kW : 191.0
                                                                      100H.: (18.7...19.5)
Speed
              1/min: 2100
                                                       Dispersion
                                                                     cm3/:0.5
TEST BENCH REQUIREMENTS
                                                                      100H.: (0.9)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                       2nd speed
                                                                     1/min: 300.0
                                                       Contr.-rod trav. m: 5.4...5.6
Del.quantity cm3/: 1.4...2.2
Overflow valve
                                                                     100H.: (1.1...2.5)
cm3/: 0.8
100H.: (1.2)
                    : 1 417 413 025
                                                       Dispersion
Inlet press., bar : 1.50
Over flow
                                                       SLEEVE POSITION
 quantity min. 1/h: 100...120
                                                       Control-lever position
                                                                    Degree: 108
                                                                     17min: 600
Calibrating nozzle-holder
                                                       Speed
              : 1 688 901 019
                                                       Cont.-rod travelmm: 19.20...20.80
 assembly
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar
                    : 207...210
                                                       1st version
Perforated-plate
                                                                     1/min: 600
                                                       Speed
 diameter mm
                    : 0,8
                                                       Charge press. hPa : 700
                                                      Charge press. Rra : 700
Del.quantity cm3/: 190.0...192.0
1000H.: (187.0...195.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
Test inj. tubing : 1 680 750 067
Outside diameter
                                                       HIGHEST RATED SPEED
x Wall thickness
                    : 6.00x1.50x1000
x Length mm
                                                       Setting point:
                                                       Speed 1/min : 600
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       Contr.-rod trav.mm: 20.0
    per values
                                                       Testing:
                                                       1st c-rod trav.mm : 11.40
G17
```

1/min : 1095...1110 Speed 2nd c-rod trav.mm : 4.00 1/min : 1200...1230 Speed 1/min : 1350 4th speed C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min : 300 Contr.-rod trav.mm: 5.5 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.90 1/min : 300 Speed : 5.40...5.60 C-rod trav.mm : 2.00 C-rod trav.mm 1/min : 340...380 Speed TORQUE CONTROL Dimension a mm : 0.90 1/min : 1050 2nd speed : 12.30...12.50 C-rod trav.mm 3rd speed 1/min: 700 C-rod trav.mm : 13.50...13.70 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 600 Speed : 700 Pressure hPa Contr.-rod trav.mm: 13.10...13.30 Measurement 1/min : 600 Speed 1st pressure hPa : 350 C-rod trav.mm : 11.20...11.40 : 550 2nd pressure hPa : 12.40...12.60 C-rod trav.mm 3rd pressure hPa : 780 C-rod trav.mm : 13.20...13.40 4th pressure hPa : 1100 C-rod tray.mm : 13.45...13.55 SWITCH-OVER POINT 1/min : 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 1100 1/min : 1050 Speed Del.quantity cm3/ : 184.0...187.0 1000H.: (181.0...190.0)

cm3/:8.00Dispersion 1000H.: (12.0) Charge press. hPa: 1100 Speed 1/min : 700 Del.quantity cm3/ : 204.0...208.0 1000H.: (201.0...211.0) cm3/:8.00Dispersion 1000H.: (12.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 129.0...131.0 1000H.: (126.0...134.0) Dispersion cm3/: 8.00 1000H.: (-)

ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 11.40 Speed 1/min: 1095...1110

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 190.0...210.0 1000H.: (186.0...214.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test_sheet : KHD 3,0 B 1 : 18.09.87 Edition Superceeded Calibrating oil : ISO-4113 : 0 400 463 146 Combination no. Injection pump Pump designation : PES3A75D410/3RS1324 EP type number : 0 410 473 977 Governor Governor design. : RSV325...900A7C602-1 : 0 420 232 388 Governer no. Customer-spec. information Customer : KHD : F3L912 Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar : 1.00 Calibrating nozzle-holder assembly : 0 681 343 009 Opening | pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 Outside diameter x Wall this mess : 6.00x2.00x600 x Length, mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values START OF DELIVERY Test pressure, bar: 25...27 : 1.90...2.00 Prestroke mm : (1.85...2.05) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 2

```
SD ang. spacing CS: 0-120-240
Tolerance + - : 0.50 (0.75)
SD mark cyl. no. : 1
BASIC SETTING
            1/mi: 700
1st speed
Contr.-rod trav.mm: 12.90...13.00
Del.quantity cm3/: 5.2...5.3
               100H.: (5.1...5.5)
Dispersion
               cm3/:0.2
               100H.: (0.4)
2nd speed 1/min: 325.0

Contr.-rod trav. m: 8.6...8.8

Del.quantity cm3/: 0.8...1.4

100H.: (0.6...1.5)

Dispersion cm3/: 0.2
                100H.: (0.3)
SLEEVE POSITION
Control-lever position
              Degree: -3
1/min: 800
Speed
Cont.-rod travelmm: 0.30...1.00
Governor-spring reload
Notch setting x : 5.00
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
               1/min: 700
Speed
Del.quantity cm3/: 52.5...53.5
              1000H.: (51.0...55.0)
cm3/ : 2.50
Dispersion
              1000H.: (4.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 50...58
Testing:
1st c-rod trav.mm : 11.40
  Speed 1/min: 940...950
2nd c-rod trav.mm : 4.00
  Speed 1/min: 955...985
3rd c-rod trav.mm : 4.00
Speed 1/min: 1005...1035
4th speed 1/min: 1100
```

G20

C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I Control-lever position degrees: 18...26 Setting point w/out aux. spring 1/min : 325 Contr.-rod trav.mm: 8.2 1/min : 325 Speed C-rod trav.mm : 8.60...8.80 C-rod trav.mm : 2.00 Speed 1/min : 525...585 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 700 C-rod trav.mm : 12.90...13.00 2nd speed 1/min: 500 C-rod trav.mm : 12.90...13.00 3rd speed 1/min: 850 C-rod trav.mm : 12.50...12.80 4th speed 1/min: 900 C-rod trav.mm : 12.40...12.60 5th speed 1/min : 900 C-rod trav.mm : 12.00...12.10 ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 11.40 Speed 1/min: 940...950 STARTING FUEL DELIVERY Speed 1/min : 100

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Contr.-rod trav.mm: 9.00...12.00
                                                     Cam sequence : 1- 3- 2
Note inst. in remarks column
Test sheet
                    : KHD 1 G 27
                                                     SD ang. spacing CS: 0-120-240 Tolerance + - : 0.50 (0.76
                    : 09.10.87
Edition
                    : 20.6.87
                                                                        : 0.50 (0.75)
Superceeded
                   : ISO-4113
Calibrating oil
                                                     SD mark cyl. no. : 1
Combination no.
                    : 0 400 463 153
                                                     BASIC SETTING
Injection pump
Pump designation : PES3A80D410/3RS1350
                                                     1st speed
                                                                    1/mi: 1250
EP type number
                    : 0 410 483 023
Governor
                                                     Contr.-rod trav.mm: 10.10...10.20
Governor design.
                    : RSV325...1250A2C2168
                                                     Del.quantity cm3/ : 5.7...5.8
                      -3L
                    : 0 420 232 475
Governer no.
                                                                    100H.: (5.6...6.0)
Customer-spec. information
Customer
                                                                   cm3/:0.2
                    : KHD
                                                     Dispersion
Engine
                    : F3L912
                                                                   100H.: (0.3)
1st version kW : 40.0
                                                                   1/min: 325.0
                                                     2nd speed
Speed
              1/min: 2500
                                                     Contr.-rod trav. m: 6.8...7.0
                                                     Del.quantity cm3/: 1.0...1.6
100H:: (0.8...1.7)
Dispersion cm3/: 0.2
100H:: (0.3)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
                                                     SLEEVE POSITION
Overflow valve
                                                     Control-lever position
                    : 1 417 413 000
                                                                  Degree: -3
                                                                   17min: 800
Inlet press., bar : 1.00
                                                     Cont.-rod travelmm: 0.30...0.70
                                                     Governor-spring reload
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                     Notch setting x : 3.00
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                     1st version
                                                     Speed
                                                                   1/min: 1250
                                                     Del.quantity cm3/: 57.5...58.5
1000H.: (56.0...60.0)
Dispersion cm3/: 2.50
1000H.: (3.50)
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
                   : 6.00x2.00x600
x Length mm
                                                     HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
                                                     1st version
    Set constant delivery quant.
                                                     Control-lever
    per values ____
                                                      position degrees: 41...49
START OF DELIVERY
                                                     Testing:
                                                     1st c-rod trav.mm : 9.10
Test pressure, bar: 25...27
                                                       Speed 1/min: 1290...1300
Prestroke mm
                   : 1.90...2.00
                                                     2nd c-rod trav.mm : 4.00
                    : (1.85...2.05)
                                                       Speed 1/min: 1315...1345
G22
```

```
3rd c-rod trav.mm: 4.00
          1/min : 1330...1360
  Speed
4th speed 1/min: 1500
                  : 0.30...1.40
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 12...20
Setting point w/out aux. spring
           1/min : 325
Speed
Contr.-rod trav.mm: 5.5
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 19.50
           1/min : 325
Speed
C-rod trav.mm
                : 5.90...6.10
C-rod trav.mm
                  : 2.00
           1/min : 455...515
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 1250
1st speed
                : 10.10...-10.20
  C-rod trav.mm
2nd speed
            1/min : 500
  C-rod trav.mm : 10.90...11.00
4th speed 1/min: 1025
                : 10.50...10.70
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
            1/min : 800
Speed
Del.quantity cm3/: 54.0...56.0
1000H.: (52.0...58.0)
             cm3/: 2.00
Dispersion
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 9.10
Speed
           1/min : 1290...1300
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 130.0...140.0
            1000H.: (127.0...143.0)
Contr.-rod trav.mm: 19.50...21.00
Remarks:
                  : DX 3.30 V/F
APPLICATION
Tractor (tractor engines)
G23
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : KHD 1 G : Edition : 18.09.87 Superceeded : 9.3.87 : KHD 1 G 29 Calibrating oil : ISO-4113

: 0 400 463 154 Combination no.

Injection pump

Pump designation : PES3A80D410/3RS1350 : 0 410 483 023

EP type number Governor

Governor design. : RSV325...1175A8C2223

Governer no. : 0 420 232 482

Customer-spec. information Customer

Engine : F3L912

1st version kW : 33.0 1/min: 2350 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter x Wall thickness

: 6,00x2,00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 1.90...2.00 Prestroke mm

: (1.85...2.05)

Contrrod trav.mm: 9.0012.00 Cam sequence : 1- 3- 2	3rd c-rod trav.mm : 4.00 Speed 1/min : 12451275 4th speed 1/min : 1420 C-rod trav.mm : 0.301.40
SD ang. spacing CS: 0-120-240 Tolerance + - : 0.50 (0.75)	LOWEST RATED SPEED I Control-lever position degrees: 1927
SD mark cyl. no. : 1	Setting point W/out aux. spring Speed 1/min: 325
BASIC SETTING	Contrrod trav.mm: 5.8
1st speed 1/mi: 800	Testing: Speed 1/min : 100
Contrrod trav.mm: 10.2010.50	C-rod trav.mm min : 19.50 Speed
Del.quantity cm3/: 4.84.9	
100H.: (4.65.0)	
Dispersion cm3/: 0.2	TORQUE CONTROL
100H.: (0.4)	Torque-control curve - 1st version 1 1st speed 1/min: 800 1
2nd speed 1/min: 325.0	
10011, 10,57	0 1 0 Q (1 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
SIEENE DUSTIUM	FIFE - NEL TVERY CHARACTERISTICS
SLEEVE POSITION Control-lever position	FUEL-DELIVERY CHARACTERISTICS
Control-lever position Degree: -3 Speed 1/min: 800 Controd travelmm: 0.300.70	1st version Speed 1/min: 1175
Control-lever position Degree: -3 Speed 1/min: 800	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0 1000H.: (44.052.0) Speed 1/min: 800
Control-lever position Degree: -3 Speed 1/min: 800 Controd travelmm: 0.300.70 Governor-spring reload	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0
Control-lever position Degree: -3 Speed 1/min: 800 Controd travelmm: 0.300.70 Governor-spring reload Notch setting x: 5.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0
Control-lever position Degree: -3 Speed 17min: 800 Controd travelmm: 0.300.70 Governor-spring reload Notch setting x: 5.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800 Del.quantity cm3/: 48.049.0 1000H.: (46.550.5)	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0
Control-lever position Degree: -3 Speed 1/min: 800 Controd travelmm: 0.300.70 Governor-spring reload Notch setting x: 5.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800 Del.quantity cm3/: 48.049.0	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0
Control-lever position Degree: -3 Speed 17min: 800 Controd travelmm: 0.300.70 Governor-spring reload Notch setting x: 5.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800 Del.quantity cm3/: 48.049.0 1000H.: (46.550.5) Dispersion cm3/: 2.50	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0
Control-lever position Degree: -3 Speed 1/min: 800 Controd travelmm: 0.300.70 Governor-spring reload Notch setting x: 5.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800 Del.quantity cm3/: 48.049.0 1000H.: (46.550.5) Dispersion cm3/: 2.50 1000H.: (4.00)	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0
Control-lever position Degree: -3 Speed 1/min: 800 Controd travelmm: 0.300.70 Governor-spring reload Notch setting x: 5.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800 Del.quantity cm3/: 48.049.0 1000H.: (46.550.5) Dispersion cm3/: 2.50 1000H.: (4.00) HIGHEST RATED SPEED	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0 1000H.: (44.052.0) Speed 1/min: 800 Del.quantity cm3/: 45.047.0 1000H.: (43.049.0) Dispersion cm3/: 2.5 1000H.: (4.0) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 8.10
Control-lever position Degree: -3 Speed 1/min: 800 Controd travelmm: 0.300.70 Governor-spring reload Notch setting x: 5.50 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800 Del.quantity cm3/: 48.049.0 1000H.: (46.550.5) Dispersion cm3/: 2.50 1000H.: (4.00) HIGHEST RATED SPEED 1st version Control-lever	1st version Speed 1/min: 1175 Del.quantity cm3/: 46.050.0

Remarks: : RENAULT APPLICATION
Tractor (tractor engines)

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BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
Test sheet
                    : DAF 8,3 K
                                                        SD mark cyl. no. : 1
Edition
                    : 18.09.87
Superceeded
                                                        START OF DELIVERY DIFFERENCE
                    : 12.9.86
                  : ISO-4113
Calibrating oil
                                                        betw.c-rod trav.mm: 8.50...9.50
                                                        & c-rod tray max. : 21.00
Difference CS : 3.00...4.00
Combination no.
                    : 0 400 646 252
Injection pump
Pump designation
                   : PE6A95D410R$2525
                                                        BASIC SETTING
EP type number
                    : 0 410 696 987
                                                                        1/mi: 1000
Governor
                                                        1st speed
Governor design. : RQ225/1200AB1007L
Governer no.
                    : 0 420 200 060
                                                        Contr.-rod trav.mm: 12.60...12.70
                                                        Del.quantity cm3/ : 10.9...11.0
Customer-spec. information
Customer
                    : DAF
                                                                       100H.: (10.7...11.2)
Engine
                    : DHR/DHTD 825
                                                                       cm3/:0.3
                                                        Dispersion
TEST BENCH REQUIREMENTS
                                                                       100H.: (0.6)
Calibrating-oil inlet temp. OC
                                                        2nd speed 1/min: 225.0
Contr.-rod trav. m: 5.7...5.9
Del.quantity cm3/: 0.7...1.2
                    : 38...42
Overflow valve
                                                                      100H.: (0.4...1.4) cm3/: 0.3
                     : 1 417 413 000
                                                        Dispersion
                                                                       100H.: (0.5)
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                        SLEEVE POSITION
              : 0 681 343 009
                                                        Control-lever position
 assembly
                                                                     Degree: -2
                                                                      17min: 650
Opening
                                                        Speed
 pressure, bar : 172...175
                                                        Cont.-rod travelmm: 16.80...18.40
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 015
                                                        1st version
                                                       Speed 1/min: 1000
Charge press. hPa: 700
Del.quantity cm3/: 109.0...110.0
1000H.: (107.0...112.0)
Dispersion cm3/: 3.50
1000H.: (6.00)
Outside diameter
x Wall thickness
                    : 6.00x1.50x600
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       HIGHEST RATED SPEED
    per values
START OF DELIVERY
                                                        1st version
Test pressure, bar: 25...27
                                                        Setting point:
                    : 2.00...2.10
                                                                    1/min : 650
Prestroke mm
                                                        Contr.-rod trav.mm: 17.6
                    : (1.95...2.15)
Contr.-rod trav.mm: 7.50...10.50
Cam sequence : 1-5-3-6-2-4
                                                        Testing:
                                                        1st c-rod trav.mm : 11.60
                                                          Speed 1/min: 1230...1245
```

2nd c-rod trav.mm : 4.00 Speed 1/min: 1315...1345 th speed 1/min: 1390 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 225 Speed Contra-rod trav.mm: 5.8 Testing: 1/min : 100 Speed C-rod trav.mm min : 7.20 Speed 1/min : 225 C-rod trav.mm : 5.70...5.90 C-rod trav.mm : 2.00 Speed 1/min: 340...380 1/min : 450 Speed C-rod trav.mm max: 1.00 TORQUE CONTROL Dimension a mm Torque-control curve - 1st version 1st speed 1/min : 1000 C-rod trav.mm : 12.60...12.70 2nd speed 1/min: 1200 C-rod trav.mm : 12.50...12.70 Adjustment test, manifold-pressure compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 1000 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.60...12.70 Measurement Speed 1/min : 1000 1st pressure hPa : 300 : 12.30...12.40 C-rod trav.mm 2nd pressure hPa : 260 C-rod trav.mm : 11.70...12.00 3rd pressure hPa : -C-rod trav.mm : 11.50...11.60 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 85.5...86.5 1000H.: (83.5...88.5) ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than full-load trav.mm: 11.60

1/min : 1230...1245

MIDDLE RATED SPEED

Speed 1/min: 0...0 100

STARTING FUEL DELIVERY

Speed 1/min: 100
Del.quantity cm3/: 130.0...140.0
1000H.: (127.0...143.0)
Contr.-rod trav.mm: 19.50...21.00

LOW IDLE

Speed

Speed 1/min: 225 Contr.-rod trav.mm: 5.70...5.90 Del.quantity cm3/: 7.0...12.0 1000H.: (4.5...14.5) Dispersion cm3/: 3.5 1000H.: (5.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition : MB 8,7 C 5 : 09.10.87 Superceeded Calibrating oil : ISO-4113 Combination no. : 0 400 646 270 Injection pump Pump designation : PE6A90D410RS2124X EP type number : 0 410 696 155 Governor Governor design. : RQ375/1275AB658-1DL Governer no. T : 0 420 202 296 Customer-spec. information Customer : DAIMLER-BENZ : OM 360 Engine 1st version kW : 110.0 Speed 1/min: 2550 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar : 1.00 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 014 Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values START OF DELIVERY Test pressure, bar: 25...27 : 2.15...2.25 Prestroke mm : (2.10...2.30) Contr.-rod trav.mm: 9.00...12.00

```
: 1-5-3-6-2-4
Cam sequence
                                                        Contra-rod trav.mm: 7.5
                                                        Testing:
                                                                      1/min : 100
                                                        Speed
SD ang. spacing CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
                                                        C-rod trav.mm min : 9.00
                                                        Speed 1/min: 375
C-rod trav.mm: 7.40...7.60
                                                                             : 2.00
SD mark cyl. no. : 1
                                                        C-rod trav.mm
                                                                      1/min : 465...505
1/min : 550
                                                        Speed
BASIC SETTING
                                                        Speed
                                                        C-rod trav.mm max: 1.00
                1/mi: 1250
1st speed
                                                        TORQUE CONTROL
Contr.-rod trav.mm: 9.30...9.40
                                                        Dimension a mm : ?
                                                        Torque-control curve - 1st version
Del.quantity cm3/: 6.9...7.0
                                                                    1/min : 1250
                                                        1st speed
                                                          C-rod trav.mm : 9.30...9.40
               100H.: (6.7...7.2)
                                                        2nd speed 1/min: 700
                                                          C-rod trav.mm : 10.10...10.20
Dispersion
               cm3/:0.3
                                                        3rd speed 1/min: 895
                                                        C-rod trav.mm : 9.80...10.00
4th speed 1/min : 1075
               100H.: (0.4)
                                                          C-rod trav.mm : 9.40...9.70
2nd speed 1/min: 375.0
Contr.-rod trav. m: 7.4...7.6
Del.quantity cm3/: 1.0...1.6
100H.: (-)
                                                        FUEL-DELIVERY CHARACTERISTICS
                                                        1st version
SLEEVE POSITION
                                                                      1/min : 600
                                                        Speed
                                                        Del.quantity cm3/: 64.5...67.5
1000H.: (62.0...70.0)
Control-lever position
             Degree: -1
1/min: 700
Speed
Cont.-rod travelmm: 15.60...16.40
                                                        ROTATIONAL-SPEED LIMITATION
FULL-LOAD DELIV, AT FULL-LOAD STOP
                                                        1st version
                                                        1mm control-rod travel less than
1st version
               1/min: 1250
Speed
Del.quantity cm3/: 69.5...70.5
1000H:: (67.5...72.5)
Dispersion cm3/: 3.00
                                                         full-load trav.mm: 8.30
                                                                      1/min: 1290...1300
                                                        Speed
              1000H.: (4.50)
                                                        STARTING FUEL DELIVERY
HIGHEST RATED SPEED
                                                        Speed 1/min: 100
Del.quantity cm3/: 58.0...68.0
1000H.: (55.0...71.0)
1st version
                                                        Contr.-rod trav.mm: 10.20...10.60
Setting point:
          1/min : 700
Speed
Contr.-rod trav.mm: 16.0
                                                        Remarks:
Testing:
1st c-rod trav.mm : 8.30
            1/min : 1290...1300
  Speed
2nd c-rod trav.mm : 4.00
             1/min : 1345...1375
  Speed
LOWEST RATED SPEED I
Sching point w/out aux. spring
```

Special

H₀2

1/min : 375

```
Cam sequence : 1- 6- 5- 4- 3- 2
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                   : KHD 9,6 I 2
: 18.09.87
: 24.7.87
                                                     SD ang. spacing ^{0}CS: 0-75-120-195-240-315 Tolerance ^{+} : 0.50 (0.75)
Superceeded
Calibrating oil
                 : ISQ-4113
                                                      SD mark cyl. no. : 1
Combination no.
                    : 0 400 646 275
                                                      BASIC SETTING
Injection pump
                                                      1st speed
                                                                     1/mi: 1250
Pump designation : PE6A95D410LS2621
                                                      Contr.-rod trav.mm: 10.40...10.50
EP type number
                    : 0 410 696 982
Governor
                                                      Del.quantity cm3/: 9.2...9.4
Governor design. : RQ300/1250AB1148-1L
Governer no.
                  : 0 420 200 104
                                                                   100H.: (9.0...9.6)
Customer-spec. information
                                                                   cn3/: 0.3
Customer
                   : KHD
                                                     Dispersion
                    : F6L413F
                                                                    100H.: (0.6)
Engine
1st version kW : 141.0
                                                      2nd speed
                                                                   1/min: 300.0
              1/min: 2500
                                                     Contr.-rod trav. m: 6.4...6.6
Speed
                                                     Del.quantity cm3/: 0.8...1.4
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.5...1.6)
                                                                   cm3/:0.3
                                                     Dispersion
Calibrating-oil inlet temp. OC
                                                                   100H.: (0.5)
                    : 38...42
                                                      SLEEVE POSITION
                                                     Control-lever position
Overflow valve
                    : 1 417 413 000
                                                                  Degree: -2
                                                                   1/min: 600
                                                      Cont.-rod travelmm: 16.80...18.40
Inlet press., bar : 1.00
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                     1st version
                                                                   1/min: 1250
Opening
                                                     Speed
                                                     Del.quantity cm3/: 92.0...94.0
1000H.: (90.0...96.0)
Dispersion cm3/: 3.50
 pressure, bar : 172...175
                                                                  1000H.: (6.00)
Test inj. tubing : 1 680 750 014
                                                     HIGHEST RATED SPEED
Outside diameter
x Wall thickness
x Length mm
                  : 6.00x2.00x600
                                                     1st version
(A) Injection pump setting values
                                                     Setting point:
    Insp. values in parentheses
Set constant delivery quant.
                                                     Speed
                                                                1/min : 600
                                                     Contr.-rod trav.mm: 17.6
    per values
                                                     Testing:
START OF DELIVERY
                                                     1st c-rod trav.mm : 9.40
                                                     Speed 1/min: 1295...1310
2nd c-rod trav.mm: 4.00
Test pressure, bar: 25...27
                                                                  1/min : 1325...1355
                    : 2.00...2.10
Prestroke mm
                   : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00
                                                     LOWEST RATED SPEED I
H04
```

```
Setting point w/out aux. spring
Speed 1/min: 300
Contr.-rod trav.mm: 6.5
Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.90
Speed 1/min: 300
C-rod trav.mm
                  : 6.40...6.60
C-rod trav.mm
                   : 2.00
            1/min: 340...380
Speed
TORQUE CONTROL
Dimension a mm : 0.17
Torque-control curve - 1st version
1st speed 1/min : 1250
  C-rod trav.mm : 10.40...10.50
2nd speed 1/min: 600
  C-rod trav.mm : 10.90...11.00
3rd speed 1/min: 915
  C-rod trav.mm : 10.70...10.90
4th speed 1/min: 980
  C-rod trav.mm : 10.40...10.60
FUEL-DELIVERY CHARACTERISTICS
1st version
            1/min : 650
Speed
Del.quantity cm3/: 91.5...94.5
1000H.: (89.0...97.0)
SETTING CONTROL-ROD STOP
Speed
            1/min : 650
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
full-load trav.mm: 9.40
Speed
           1/min : 1295...1310
STARTING FUEL DELIVERY
            1/min : 100
Speed
Del.quantity cm3/: 120.0...130.0
            1000H.: (117.0...133.0)
Remarks:
                  0
```

```
: 1-8-7-2-6-5-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence
Note inst. in remarks column
Test sheet
                   : KHD 12,7 P2
                   : 18.09.87
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Edition
                   : 12.9.86
                                                                         270-315
Superceeded
                                                    Tolerance + - D
Calibrating oil
                 : ISO-4113
                                                                       : 0.50 (0.75)
Combination no.
                   : 0 400 648 141
                                                    SD mark cyl. no.
                                                                      : 1
Injection pump
                                                    BASIC SETTING
Pump designation : PE8A95D410LS2608
EP type number
                   : 0 410 698 988
                                                    1st speed
                                                                   1/mi: 1250
Governor
Governor design.
                   : RQV300...1250AB1195L
                                                    Contr.-rod trav.mm: 10.40...10.50
Governer no.
                   : 0 420 212 172
                                                    Del.quantity cm3/: 9.2...9.4
Customer-spec. information
                                                                  100H.: (9.0...9.6)
Customer
                   : KHD
                   : F8L413F
                                                                 cm3/:0.3
Engine
                                                    Dispersion
1st version kW : 188.0
                                                                  190H.: (0.6)
              1/min: 2500
Speed
                                                                  1/min: 300.0
                                                    2nd speed
TEST BENCH REQUIREMENTS
                                                    Contr.-rod trav. m: 6.5...6.7
                                                    Del.quantity cm3/: 0.8...1.4
100H.: (0.5...1.6)
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                  cm3/:0.3
                                                    Dispersion
                                                                  100H.: (0.5)
Overflow valve
                   : 1 417 413 000
                                                    (B) Setting of injection pump with
                                                        externally-mounted governor
Inlet press., bar : 1.00
                                                    SLEEVE TRAVELS
                                                    1st speed 1/min: 300
Calibrating nozzle-holder
 assembly
                  : 0 681 343 009
                                                      Sleeve travel mm: 1.20...1.30
                                                    2nd speed 1/min: 500
Sleeve travel mm: 2.80...3.00
3rd speed 1/min: 1000
Sleeve travel mm: 6.50...6.70
Opening
 pressure, bar
                  : 172...175
                                                                 1/min: 1290
                                                    4th speed
                                                      Sleeve travel mm: 8.60...8.80
                  : 1 680 750 014
Test inj. tubing
                                                    5th speed 1/min: 1375
                                                      Sleeve travel mm: 9.40...9.60
Outside diameter
x Wall thickness
                                                    SLEEVE POSITION
                  : 6.00x2.00x600
x Length mm
                                                    Control-lever position
(A) Injection pump setting values
                                                                Degree: -1
1/min: 1275
    Insp. values in parentheses
                                                    Speed
    Set constant delivery quant.
                                                    Cont.-rod travelmm: 15.20...17.80
    per values
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
Test pressure, bar: 25...27
                                                    1st version
                                                    Speed
                                                                 1/min: 1250
                                                    Del.quantity cm3/ : 92.0...94.0
Prestroke mm
                   : 2.00...2.10
                                                                1000H.: (90.0...96.0)
                   : (1.95...2.15)
Contr.-rod trav.mm: 9.00...12.00
H06
```

Dispersion cm3/ : 3.50 1000H.: (6.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 47...55 Testing: 1st c-rod trav.mm : 9.40 1/min : 1290...1300 Speed 2nd c-rod trav.mm : 4.50 1/min: 1360...1390 Speed 4th speed 1/min: 1500 C-rod trav.mm : 0.30...1.00 LOWEST RATED SPEED I Control-lever position degrees: 14...22 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.00 1/min : 300 Speed C-rod trav.mm : 6.50...6.70 CONSTANT REGULATION 1/min: 375...485 Speed TORQUE CONTROL Dimension a mm : 0.50 Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 10.40...10.50 2nd speed 1/min: 500 C-rod trav.mm : 10.90...11.00 3rd speed 1/min : 850 C-rod trav.mm : 10.70...10.90 4th speed 1/min: 950 : 10.50...10.70 C-rod trav.mm SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS 1st version 1/min : 650 Speed Del.quantity cm3/: 90.5...93.5 1000H.: (88.0...96.0) ROTATIONAL-SPEED LIMITATION 1st version

HO7

1mm control-rod travel less than

full-load trav.mm: 9.40 Speed 1/min: 1290...1300

STARTING FUEL DELIVERY

Remarks:

.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4,0 A 7 : 18.09.87 Edition

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 400 844 087

Injection pump

Pump designation : PES4A90D410RS2666 EP type number : 0 410 894 029

Governor

Governor design. : RQV300...1400AB1065-

SL.

: 0 420 212 169 Governer no.

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M364 Engine

1st version kW : 66.0 1/min: 2800 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values ____

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35

: (2.20...2.40)

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 3- 4- 2
                                                           Control-lever
                                                            position degrees: 58...66
                                                           Testing:
                                                           1st c-rod trav.mm : 9.90
SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75)
                                                              Speed 1/min: 1450...1460
                                                           2nd c-rod trav.mm : 4.00
                                                           Speed 1/min: 1560...1590
4th speed 1/min: 1630
BASIC SETTING
                                                             C-rod tray.mm : 0.00...1.00
1st speed 1/mi: 1400
                                                           LOWEST RATED SPEED I
Contr.-rod trav.mm: 10.90...11.00
                                                           Control-lever
                                                            position degrees: 20...28
Del.quantity cm3/: 6.3...6.4
                                                           Testing:
                100H.: (6.1...6.6)
                                                                         1/min: 100
                                                           Speed
                                                           C-rod trav.mm min : 10.20
                                                           Speed 1/min: 300
Dispersion
                cm3/:0.3
                                                                                : 8.60...8.80
                                                           C-rod trav.mm
                100H.: (0.5)
                                                           CONSTANT REGULATION
2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.6...8.8
Del.quantity cm3/: 0.8...1.2
100H.: (0.6...1.4)
                                                                         1/min: 540...680
                                                           Speed
                                                           TORQUE CONTROL
                                                           Dimension a mm : 1.00
               cm3/: 0.2
100H.: (0.4)
                                                           Torque-control curve - 1st version
Dispersion
                                                           1st speed 1/min: 1400
C-rod trav.mm: 10.90...11.00
(B) Setting of injection pump with externally-mounted governor
                                                           2nd speed 1/min: 630
                                                             C-rod trav.mm : 12.20...12.30
                                                           3rd speed 1/min: 900
                                                             C-rod trav.mm : 11.60...11.80
SLEEVE TRAVELS
1st speed 1/min: 300
Steeve travel mm: 0.80...1.30

2nd speed 1/min: 500

Steeve travel mm: 2.30...2.80

3rd speed 1/min: 750
                                                           SWITCH-OVER POINT
                                                           Speed 1/min: 220 (240)
  Sleeve travel mm: 4.10...4.30
                                                           FUEL-DELIVERY CHARACTERISTICS
4th speed 1/min: 1500
  Sleeve travel mm: 8.50...8.60
                                                           1st version
SLEEVE POSITION
                                                                         1/min : 630
                                                           Speed
                                                           Del.quantity cm3/: 55.5...58.5
1000H:: (53.0...61.0)
Speed 1/min: 900
Control-lever position
              Degree: -1
1/min: 1420
Cont.-rod travelmm: 15.20...17.80
                                                           Del.quantity cm3/: 54.5...57.5
                                                                         1000H.: (52.0...60.0)
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                           ROTATIONAL-SPEED LIMITATION
1st version
               1/min: 1400
Speed
Del.quantity cm3/: 63.0...64.0
1000H:: (61.0...66.0)
Dispersion cm3/: 3.00
1000H:: (5.00)
                                                           1st version
                                                           1mm control-rod travel less than
                                                            full-load trav.mm: 9.90
                                                                        1/min : 1450...1460
                                                           Speed
HIGHEST RATED SPEED
                                                           STARTING FUEL DELIVERY
1st version
H09
```

Remarks:

Set shutoff stop to contact at 3.0...3.5 mm control-rod travel.

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1- 3- 4- 2
Note inst. in remarks column
                    : MB 4.0 A 2
: 16.10.87
Test sheet
                                                      SD ang. spacing ^{\circ} CS: 0-90-180-270 Tolerance + - ^{\circ} : 0.50 (0.75)
Edition
Superceeded
                   : 12.9.86
                   : ISO-4113
Calibrating oil
                                                      BASIC SETTING
                    : 0 400 844 088
Combination no.
                                                      1st speed
                                                                    1/mi: 1400
Injection pump
Pump designation : PES4A90D410RS2666
                                                      Contr.-rod trav.mm: 10.90...11.00
EP type number
                    : 0 410 894 029
                                                      Del.quantity cm3/: 6.3...6.4
Governor
Governor design.
                    : RQV300...1400AB1065-
                                                                    100H.: (6.1...6.6)
                      10L
Governer no.
                    : 0 420 212 203
                                                                    cm3/:0.3
                                                      Dispersion
Customer-spec. information
Customer
                  : DAIMLER-BENZ
                                                                    100H.: (0.4)
                                                      2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.6...8.8
Del.quantity cm3/: 0.8...1.2
100H.: (0.6...1.4)
                    : 0M364
Engine
1st version kW : 66.0
              1/min: 1400
Speed
                                                                    cm3/:0.2
                                                      Dispersion
                                                                    100H.: (0.4)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                      (B) Setting of injection pump with
                    : 38...42
                                                          externally-mounted governor
Overflow valve
                                                      SLEEVE TRAVELS
                    : 1 417 413 000
                                                      1st speed 1/min: 300
                                                        Sleeve travel mm: 0.80...1.30
                                                      2nd speed 1/min: 500
Inlet press., bar : 1.00
                                                        Sleeve travel mm: 2.30...2.80
Calibrating nozzle-holder
                                                      3rd speed 1/min: 750
             : 0 681 343 009
                                                        Sleeve travel mm: 4.10...4.30
 assembly
                                                      4th speed 1/min: 1500
Sleeve travel mm: 8.50...8.60
Opening
 pressure, bar : 172...175
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                                   Degree: -1
Test inj. tubing : 1 680 750 015
                                                                    17min: 1420
                                                      Speed
                                                      Cont.-rod travelmm: 15.20...17.80
Outside diameter
x Wall thickness
                    : 6.00X1.50X600
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
x Length mm
(A) Injection pump setting values
                                                      1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                      Speed
                                                                    1/min: 1400
                                                      Del.quantity cm3/: 63.5...64.5
                                                                   1000H.: (61.5...66.5) cm3/ : 3.00
    per values
                                                      Dispersion
                                                                   1000H.: (4.50)
START OF DELIVERY
Test pressure, bar: 25...27
                                                      HIGHEST RATED SPEED
Prestroke mm
                 : 2.25...2.35
                    : (2.20...2.40)
                                                      1st version
H11
```

Control-lever position degrees: 57...65 Testing: 1st c-rod trav.mm : 9.90 Speed 1/min: 1440...1450 2nd c-rod trav.mm : 4.00 Speed 1/min: 1545...1575 4th speed 1/min: 1630 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 20...28 Testing: 1/min : 100 Speed C-rod trav.mm min: 10.20 Speed 1/min: 300 : 8.60...8.80 C-rod trav.mm CONSTANT REGULATION Speed 1/min : 540...680 TORQUE CONTROL Dimension a mm : 1.00 Torque-control curve - 1st version 1st speed 1/min : 1400 C-rod trav.mm : 10.90...11.00 2nd speed 1/min : 500 C-rod trav.mm : 11.90...12.00 3rd speed 1/min : 700 C-rod trav.mm : 11.50...11.80 4th speed 1/min: 900 C-rod trav.mm : 11.30...11.50 SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS 1st version Speed 1/min: 900 Del.quantity cm3/: 52.5...55.5 1000H.: (50.0...58.0) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 9.90 Speed 1/min : 1440...1450

H12

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 78.0...88.0 1000H:: (75.0...91.0)

Contr.-rod trav.mm: 16.60...17.00

Remarks:

Set shutoff stop to contact at 3.0...3.5 mm control-rod travel.

```
Contr.-rod trav.mm: 9.00...12.00
Gam sequence : 1- 5- 3- 6- 2-
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                    : MB 5,7 V 10
Test sheet
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                    : 18.09.87
Edition
Superceeded
                    : 8.82
                    : ISO-4113
Calibrating oil
                                                        BASIC SETTING
                    : 0 400 846 493
Combination no.
                                                                       1/mi: 1400
                                                        1st speed
Injection pump
Pump designation : PES6A90D410RS2596
                                                        Contr.-rod trav.mm: 11.90...12.00
EP type number
                    : 0 410 896 073
                                                       Del.quantity cm3/ : 7.3...7.4
Governor
                    : RQV300...1400AB1120-
Governor design.
                                                                      100H.: (7.1...7.6)
                       1L
                    : 0 420 212 157
Governer no.
                                                        Dispersion
                                                                      cm3/:0.3
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                      100H.: (0.4)
                                                       2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.5...8.7
                    : 0M352A
Engine
                                                       Del.quantity cm3/: 0.9...1.5
100H:: (0.7...1.7)
Dispersion cm3/: 0.2
1st version kW : 124.0
               1/min: 2800
Speed
TEST BENCH REQUIREMENTS
                                                                      100H.: (0.4)
Calibrating-oil inlet temp. C
                                                        SLEEVE POSITION
                    : 38...42
                                                        Control-lever position
                                                                     Degree: -1
1/min: 1500
Overflow valve
                                                       Cont.-rod travelmm: 15.20...17.80
                     : 1 417 413 000
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.00
Calibrating nozzle-holder
                                                       1st version
                                                       Speed 1/min: 1400
Charge press. hPa: 700
Del.quantity cm3/: 73.5...74.5
1000H.: (71.5...76.5)
Dispersion cm3/: 3.00
              : 0 681 343 009
 assembly
Opening
 pressure, bar : 172...175
                                                                     1000H.: (4.50)
Test inj. tubing : 1 680 750 014
                                                       HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                       1st version
                    : 6.00x2.00x600
                                                       Control-lever
x Length mm
                                                        position degrees: 59...67
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       Testing:
                                                       1st c-rod trav.mm : 10.90
                                                                   1/min : 1440...1450
    per values
                                                          Speed
                                                       2nd c-red trav.mm: 4.00
                                                          Speed 1/min: 1570...1600
START OF DELIVERY
                                                       4th speed 1/min: 1750
Test pressure, bar: 25...27
                                                                            : 0.00...1.00
                                                          C-rod trav.mm
Prestroke mm : 2.00...2.10
                    : (1.95...2.15)
                                                       LOWEST RATED SPEED I
H13
```

Control-lever position degrees: 22...30

Testing:

Speed 1/min : 100 C-rod trav.mm min : 10.10 Speed 1/min : 300

: 8.50...8.70 C-rod trav.mm

CONSTANT REGULATION

1/min : 590...660 Speed

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1400

C-rod trav.mm : 11.90...12.00 2nd speed 1/min : 500 C-rod trav.mm : 13.00...13.10 3rd speed 1/min : 1000

C-rod trav.mm : 12.70...12.90

4th speed 1/min : 1200

C-rod trav.mm : 12.10...12.40

Adjustment test, manifold-pressure compensator (LDA, ADA, ALDA)

1st version

Setting

1/min : 500 Speed hPa : 700 Pressure

Contr.-rod trav.mm: 13.00...13.10

Measurement

1/min : 500 Speed

1st pressure hPa : -

C-rod trav.mm : 11.90...12.00

2nd pressure hPa : 320

3rd pressure hPa : 200

: 12.20...12.40 C-rod trav.mm

SWITCH-OVER POINT

Speed 1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS

ist version

Charge press. hPa : 700

Speed 1/min : 500

Del.quantity cm3/: 67.5...69.5 1000H.: (65.5...71.5) Charge press. hPa: -Speed 1/min: 500

Del.quantity cm3/ : 56.0...58.0

1000H.: (54.0...60.0)

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 10.90

Speed 1/min : 1440...1450

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/: 71.0...81.0 1000H.: (68.0...84.0) Contr.-rod trav.mm: 14.90...15.30

Remarks:

Set shutoff stop to contact at 3.0...3.5 mm control-rod travel.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Note inst. in remarks column
Test sheet
                    : MAN 11,4 B2
                    : 18.09.87
Edition
                                                     SD mark cyl. no. : 6
Superceeded
                    : ISO-4113
Calibrating oil
                                                     BASIC SETTING
Combination no.
                    : 0 400 846 507
                                                                     1/mi: 700
                                                     1st speed
                                                     Contr.-rod trav.mm: 13.40...13.50
Injection pump
Pump designation
                    : PES6A95D410LS2639
EP type number
                    : 0 410 896 925
                                                     Del.quantity cm3/: 12.6...12.8
Governor
                    : RQ250...1100AB1137-6
                                                                    100H.: (12.4...13.0)
Governor design.
                    : 0 420 200 088
                                                                   cm3/:0.3
Governer no.
                                                     Dispersion
Cust, part no.
                    : MAN-NR. 2-7413
                                                                    100H.: (0.6)
Customer-spec. information
                                                     2nd speed
                                                                    1/min: 250.0
                                                     Contr.-rod trav. m: 7.0...7.2
Customer
                                                     Del.quantity cm3/: 0.9...1.5
100H.: (0.6...1.7)
TEST BENCH REQUIREMENTS
                                                                   cm3/: 0.3
100H.: (0.5)
                                                     Dispersion
Calibrating-oil inlet temp. C
                    : 38...42
                                                     SLEEVE POSITION
                                                     Control-lever position
Overflow valve
                    : 1 417 413 000
                                                                  Degree: -1
                                                                   17min: 600
                                                     Speed
                                                     Cont.-rod travelmm: 15.60...16.40
Inlet press., bar : 1.00
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                     1st version
                                                                   1/min: 700
Opening.
                                                     Speed
                                                     Del.quantity cm3/: 126.0...128.0
1000H.: (124.0...130.0)
Dispersion cm3/: 3.00
 pressure, bar : 172...175
                                                                  1000H.: (6.00)
Test inj. tubing : 1 680 750 014
                                                     HIGHEST RATED SPEED
Outside diameter
x Wall thickness
x Length mm
                   : 6.00x2.00x600
                                                     1st version
(A) Injection pump setting values
                                                     Setting point:
    Insp. values in parentheses
Set constant delivery quant.
                                                     Speed
                                                              1/min : 600
                                                     Contr.-rod trav.mm: 16.0
    per values ____
                                                     Testing:
START OF DELIVERY
                                                     1st c-rod trav.mm : 11.50
                                                                 1/min: 1145...1160
Test pressure, bar: 25...27
                                                       Speed
                                                     2nd c-rod trav.mm: 4.00
                                                                  1/min: 1245...1275
                    : 1.70...1.80
Prestroke mm
                                                       Speed
                   : (1.65...1.85)
Contr.-rod trav.mm: 9.00...12.00
                                                     LOWEST RATED SPEED I
                                                     Setting point w/out aux. spring
Cam sequence : 1- 5- 3- 6- 2-
                                                     Speed `
                                                               1/min : 250
H15
```

```
Contr.-rod trav.mm: 6.0
Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.50
            1/min : 250
Speed
C-rod trav.mm
                  : 5.90...6.10
                  : 2.00
C-rod trav.mm
            1/min: 385...425
Speed
Speed
            1/min : 450
C-rod trav.mm max: 1.00
TORQUE CONTROL
Dimension a mm : 0.40
Torque-control curve - 1st version
1st speed 1/min: 1100
                 : 12.50...12.60
  C-rod trav.mm
2nd speed 1/min: 600
 G-rod trav.mm : 13.40...13.50
3rd speed 1/min: 860
  C-rod trav.mm : 13.10...13.30
4th speed 1/min: 910
  C-rod trav.mm : 12.60...12.90
FUEL-DELIVERY CHARACTERISTICS
1st version
            1/min : 1100
Speed
Del.quantity cm3/: 127.0...130.0
1000H.: (124.5...132.5)
            1/min : 500
Speed
Del.quantity cm3/: 126.5...130.5
            1000H.: (124.5...132.5)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.50
Speed
            1/min : 1145...1160
STARTING FUEL DELIVERY
            1/min : 100
Speed
Del.quantity cm3/: 95.0...105.0
            1000H.: (92.0...108.0)
Contr.-rod trav.mm: 13.60...14.00
Remarks:
                  : MAN-NR. 2-7413
Set idle stop at 250 min. -1
                               to a
control-rod travel of 6.0 mm
```

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam seguence : 1-5-3-6-2-4
Note inst. in remarks column
                    : MB 6.0 A
: 16.10.87
: 24.7.87
Test sheet
                                                       SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0.50 (0.75)
Edition
Superceeded
                    : ISO-4113
Calibrating oil
                                                       BASIC SETTING
                    : 0 400 846 522
Combination no.
                                                                       1/mi: 1400
                                                       1st speed
Injection pump
                                                       Contr.-rod trav.mm: 11.10...11.20
Pump designation : PES6A90D41ORS2667
EP type number
                    : 0 417 896 080
                                                       Del.quantity cm3/: 6.3...6.4
Governor
                    : RQV300...1400AB1065-
Governor design.
                                                                      100H.: (6.1...6.6)
                    : 0 420 212 168
Governer no.
                                                       Dispersion
                                                                      cm3/:0.3
Customer-spec. information
Customer
                   5 DAIMLER-BENZ
                                                                      100H.: (0.4)
                                                       2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.9...9.1
Del.quantity cm3/: 0.9...1.3
100H.: (0.7...1.5)
                    : OM 366
Engine
1st version kW : 100.0
Speed
              1/min: 2800
                                                                      cm3/:0.2
                                                       Dispersion
                                                                      100H.: (0.4)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                       (B) Setting of injection pump with
                    : 38...42
                                                            externally-mounted governor
Overflow valve
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 300
Sleeve travel mm: 0.80...1.30
                    : 1 417 413 000
                                                       2nd speed 1/min: 500
Inlet press., bar : 1.00
                                                         Sleeve travel mm: 2.30...2.80
Calibrating nozzle-holder
                                                       3rd speed 1/min: 750
                                                       Sleeve travel mm: 4.10...4.30
4th speed 1/min: 1500
                   : 0 681 343 009
 assembly
                                                         Sleeve travel mm: 8.50...8.60
Opening
 pressure, bar
                   : 172...175
                                                       SLEEVE POSITION
                                                       Control-lever position
                   : 1 680 750 015
Test inj. tubing
                                                                    Degree: -1
                                                                     17min: 1520
                                                       Speed
                                                       Cont.-rod travelmm: 15.20...17.80
Outside diameter
x Wall thickness
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
                    : 6.00x1.50x600
x Length mm
(A) Injection pump setting values
                                                       1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                                      1/min: 1400
                                                       Speed
                                                       Del.quantity cm3/: 63.5...64.5
                                                                    1000H.: (61.5...66.5)
cm3/: 3.00
    per values
                                                       Dispersion
                                                                    1000H.: (4.50)
START OF DELIVERY
Test pressure, bar: 25...27
                                                       HIGHEST RATED SPEED
                    : 2.25...2.35
Prestroke mm
                    : (2.20...2.40)
                                                       1st version
H17
```

```
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 10.10
  Speed 1/min: 1460...1470
2nd c-rod trav.mm : 4.00
           1/min : 1560...1590
  Speed
4th speed 1/min: 1630
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 21...29
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 10.30
           1/min : 300
Speed
C-rod trav.mm
                  : 8.90...9.10
CONSTANT REGULATION
            1/min : 540...680
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 1400
1st speed
  C-rod trav.mm : 11.10...11.20
           1/min : 500
2nd speed
  C-rod trav.mm : 12.30...12.40
3rd speed 1/min: 900
C-rod trav.mm : 11.90...12.10
4th speed 1/min : 1100
  C-rod trav.mm : 11.40...11.70
SWITCH-OVER POINT
Speed
            1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
1st version
            1/min : 500
Speed
Del.quantity cm3/: 52.0...54.0
            1000H.: (49.5...56.5)
1/min : 900
Speed
Del.quantity cm3/: 55.0...58.0
            1000H.: (52.5...60.5)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.10
Speed
            1/min : 1460...1470
STARTING FUEL DELIVERY
H18
```

Speed 1/min: 100
Del.quantity cm3/: 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 17.00...17.40
Remarks:

Set shutoff stop to contact at 3.0...3.5 mm control-rod travel.

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                   : FIA 5,9 A 1
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : 18.09.87
Superceeded
                    : 12.9.86
Calibrating oil : ISO-4113
                                                        SD mark cyl. no. : 1
                    : 0 400 846 550
Combination no.
                                                        BASIC SETTING
Injection pump
Pump designation : PES6A90D410RS2713
                                                         1st speed 1/mi: 1350
EP type number
                     : 0 410 896 083
                                                        Contr.-rod trav.mm: 11.70...11.80
Governor
Governor design.
                     : RQV300...1350AB1175-
                       3L
                                                        Del.quantity cm3/: 6.8...6.9
Governer no.
                    : 0 420 212 192
                                                                       100H.: (6.6...7.1)
Customer-spec. information
Customer
                                                        Dispersion
                                                                       cm3/:0.3
                     : 8060.25.640
Engine
                                                                       100H.: (0.5)
1st version kW : 103.0
                                                                       1/min: 300.0
                                                        2nd speed
                                                        Contr.-rod trav. m: 9.7...9.9
Del.quantity cm3/: 1.2...1.8
100H.: (1.0...2.0)
Dispersion cm3/: 0.2
100H.: (0.4)
               1/min: 2700
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                     : 38...42
                                                         (B) Setting of injection pump with
Overflow valve
                                                             externally-mounted governor
                     : 1 417 413 000
                                                        SLEEVE TRAVELS
                                                        1st speed 1/min: 300
Inlet press., bar : 1.00
                                                           Sleeve travel mm: 0.90...1.10
                                                        2nd speed 1/min: 435
Sleeve travel mm: 2.40...2.60
3rd speed 1/min: 780
Calibrating nozzle-holder
 assembly : 0 681 343 009
Opening
                                                           Sleeve travel mm: 4.20...4.40
 pressure, bar : 172...175
                                                        4th speed 1/min: 1400
                                                           Sleeve travel mm: 8.10...8.20
                                                        SLEEVE POSITION
Test inj. tubing : 1 680 750 014
                                                        Control-lever position
Outside diameter
                                                                      Degree: -1
1/min: 1430
x Wall thickness
                     : 6.00x2.00x600
                                                        Cont.-rod travelmm: 15.20...17.80
x Length mm
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        1st version
                                                        Speed 1/min: 1350
Charge press. hPa: 700
    per values
                                                        Del.quantity cm3/: 68.5...69.5
1000H: (65.5...71.5)
Dispersion cm3/: 3.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                                      1000H.: (5.00)
                    : 2.20...2.30
Prestroke mm
                     : (2.15...2.35)
H19
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 55...63
Testing:
1st c-rod trav.mm : 10.70
  Speed 1/min: 1390...1400
2nd c-rod trav.mm : 4,00
Speed 1/min: 1515...1545
4th speed 1/min: 1650
C-rod trav.mm: 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 14...21
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 11.20
Speed 1/min : 300
C-rod trav.mm : 9.70...9.90
CONSTANT REGULATION
             1/min : 350...450
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1350
C-rod trav.mm : 11.70...11.80
2nd speed 1/min: 500
C-rod trav.mm: 11.70...11.90
Adjustment test, manifold-pressure
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
             hPa : 700
Contr.-rod trav.mm: 11.70...11.80
Measurement
             1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm : 11.20...11.30
2nd pressure hPa : 260
  C-rod trav.mm : 11.40...11.50
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
            1/min : 800
Speed
Del.quantity cm3/: 59.0...61.0
1000H.: (56.5...63.5)
```

```
Charge press. hPa : -
             1/min : 500
Speed
Del.quantity cm3/: 44.0...46.0
1000H.: (42.0...48.0)
ROTATIONAL-SPEED LIMITATION
```

1st version 1mm control-rod travel less than full-load trav.mm: 10.70 1/min: 1390...1400 Speed

STARTING FUEL DELIVERY

Remarks:

Speed 1/min : 100 Del.quantity cm3/: 105.0...115.0 1000H.: (102.0...118.0) Contr.-rod trav.mm: 17.10...17.50

Test electrically-released starting quantity (EES) with 12 volts

H20

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50 (0.75) Note inst. in remarks column Test sheet : KHD 6,1 A 8 : 18.09.87 Edition BASIC SETTING Superceeded Calibrating oil : ISO-4113 1/mi: 1400 1st speed : 0 400 866 080 Contr.-rod trav.mm: 10.80...10.90 Combination no. Del.quantity cm3/ : 7.6...7.7 Injection pump : PES6A85D410/3RS2415 Pump designation EP type number : 0 410 886 915 100H.: (7.4...7.9) Governor : RSV325...1400A8C707-Governor design. Dispersion cm3/:0.3: 0 420 232 461 Governer no. 100H.: (0.4) 2nd speed 1/min: 325.0 Contr.-rod trav. m: 7.9...8.1 Del.quantity cm3/: 0.9...1.5 100H.: (0.7...1.7) Dispersion cm3/: 0.2 100H.: (0.4) Customer-spec. information Customer : KHD : BF6L913 Engine TEST BENCH REQUIREMENTS Calibrating-cil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar : 1.00 Governor-spring reload Notch setting x : 5.25 Calibrating nozzle-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly Opening 1st version Speed 1/min: 1400 Charge press. hPa: 700 Del.quantity cm3/: 76.0...77.0 1000H.: (74.0...79.0) Dispersion cm3/: 3.00 pressure, bar : 172...175 Test in ; tubing : 1 680 750 014 1000H.: (4.50) Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00x2.00x600 (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. Control-lever position degrees: 65...73 per values ____ Testing: START OF DELIVERY 1st c-rod trav.mm : 9.80 Test pressure, bar: 25...27 Speed 1/min : 1440...1450 2nd c-rod trav.mm : 4.00 : 1.90...2.00 Speed 1/min: 1470...1500 Prestroke mm : (1.85...2.05) 3rd c-rod trav.mm : 4.00 Speed 1/min: 1505...1535 Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 5- 3- 6- 2- 4 4th speed 1/min : 1600 Corod trav.mm : 0.30...1.40 **H21**

LOWEST RATED SPEED I Control-lever position degrees: 14...22 Testing: 1/min : 100 Speed C-rod trav.mm min : 19.50 1/min: 325 mm: 7.40...7.60 Speed C-rod trav.mm 2.00 C-rod trav.mm 1/min : 600...660 Speed TORQUE CONTROL Dimension a mm : 1.20 Torque-control curve - 1st version 1st speed 1/min: 1400 C-rod trav.mm : 10.80...10.90 2nd speed 1/min: 500 C-rod trav.mm : 12.00...12.10 3rd speed 1/min : 1040 C-rod trav.mm : 11.40...11.60 Adjustment test, manifold-pressure compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure Contr.-rod trav.mm: 12.00...12.10 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.20...10.30 2nd pressure hPa : 360 C-rod trav.mm : 11.70...11.80 3rd pressure hPa : 95 C-rod trav.mm : 10.60...10.80 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hpa : -1/min : 500 Speed Del.quantity cm3/: 44.0...47.0 1000H.: (42.0...49.0)

ROTATIONAL-SPEED LIMITATION

H22

1st version 1mm control-rod travel less than

full-load trav.mm: 9.80 Speed 1/min : 1440...1450 STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/: 105.0...115.0 1000H.: (102.0...118.0) Contr.-rod trav.mm: 17.10...17.30

LOW IDLE

Speed 1/min: 325 Contr.-rod trav.mm: 7.90...8.10 Del.quantity cm3/: 9.5...15.5

1000H.: (7.5...17.5) cm3/: 2.00 Dispersion

1000H.: (4.00)

Remarks:

Test electrically-released starting quantity (EES) with 12 volts

The stop position of the control rod must be easily reached with the stop lever

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Note inst. in remarks column
Test sheet
                    : NWM 6,2 E 4
                    : 09.10.87
Edition
                                                      START OF DELIVERY DIFFERENCE
Superceeded
                                                      betw.c-rod trav.mm: 8.50...9.50
Difference CS: 3.50...4.50
Calibrating oil : ISO-4113
                    : 0 400 866 112
Combination no.
                                                      BASIC SETTING
Injection pump
Pump designation : PES6A90D320/3RS2660
                                                      1st speed
                                                                     1/mi: 1500
EP type number
                    : 0 410 896 078
                                                      Contr.-rod trav.mm: 11.20...11.30
Governor
                    : R$V325...1500A2C505-
Governor design.
                                                      Del.quantity cm3/: 8.9...9.0
                  : 0 420 233 196
Governer no.
                                                                     100H.: (8.7...9.2)
Customer-spec. information
                                                                    cm3/:0.3
                    : MWM
                                                      Dispersion
Customer
                    : D226-6
                                                                    100H.: (0.5)
Engine
TEST BENCH REQUIREMENTS
                                                                    1/min: 325.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 7.0...7.2
Del.quantity cm3/: 0.8...1.4
Calibrating-oil inlet temp. C
                                                                     100H.: (0.6...1.6)
                    : 38...42
                                                                    cm3/: 0.2
100H.: (0.4)
                                                      Dispersion
Overflow valve
                    : 1 417 413 000
                                                      SLEEVE POSITION
Inlet press., bar : 1.00
                                                      Control-lever position
                                                                   Degree: -3
                                                                    17min: 800
Calibrating nozzle-holder
                  : 0 681 343 009
                                                      Cont.-rod travelmm: 0.30...0.70
 assembly
                                                      Governor-spring reload
Opening
pressure, bar : 172...175
                                                      Notch setting x : 4.80
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 014
                                                      1st version
                                                                    1/min: 1500
Outside diameter
                                                      Speed
                                                      Del.quantity cm3/: 89.5...90.5
1000H.: (87.5...92.5)
Dispersion cm3/: 3.00
1000H.: (5.00)
x Wall thickness
x Length mm
                 : 6.00x2.00x600
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      HIGHEST RATED SPEED
    per values ____
                                                      1st version
START OF DELIVERY
                                                      Control-lever
Test pressure, bar: 25...27
                                                       position degrees: 59...67
                    : 2.95...3.05
                                                      Testing:
Prestroke mm
                    : (2.90...3.10)
                                                      1st c-rod trav.mm : 10.20
Contr.-rod trav.mm: 9.00...12.00
                                                        Speed 1/min: 1540...1550
Cam sequence : 1- 5- 3- 6- 2- 4
                                                      2nd c-rod trav.mm : 4.00
                                                        Speed 1/min: 1590...1620
```

```
3rd c-rod trav.mm : 4.00
Speed 1/min: 1615...1645
4th speed 1/min: 1780
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 20...28
Setting point w/out aux. spring
          1/min : 325
Speed
Contr.-rod trav.mm: 6.6
Testing:
Speed 1/min: 100
C-rod trav.mm min: 19.50
Speed 1/min: 325
C-rod trav.mm: 7.00...7.20
C-rod trav.mm
                   : 2.00
            1/min : 465...525
Speed
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.20
Speed
            1/min : 1540...1550
Remarks:
                    :
```

```
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                     BASIC SETTING
                   : MB 5.7 Q 17
: 18.09.87
Test sheet
Edition
                                                                    1/mi: 1400
                                                     1st speed
Superceeded
                   : 2.9.87
                   : ISO-4113
Calibrating oil
                                                     Contr.-rod trav.mm: 9.70...9.80
                                                     Del.quantity cm3/ : 6.3...6.4
                   : 0 400 876 259
Combination no.
Injection pump
                                                                   100H.: (6.1...6.6)
Pump designation : PES6A90D410RS2293
                                                                   cm3/:0.3
                   : 0 410 896 031
EP type number
                                                     Dispersion
Governor
                   : RSV350...1400A0C1080
Governor design.
                                                                   100H.: (0.4)
                   : 0 420 232 408
                                                     2nd speed
                                                                   1/min: 350.0
Governer no.
                                                     Contr.-rod trav. m: 6.5...7.1
Customer-spec. information
                                                     Del.quantity cm3/: 1.0...1.2
                                                                   100H.: (0.8...1.4)
cm3/: 0.2
100H.: (-)
Customer
                   : DAIMLER-BENZ
                                                     Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                     SLEEVE POSITION
                   : 38...42
                                                     Control-lever position
                                                                  Degree: -3
                                                                   17min: 800
Overflow valve
                                                     Speed
                   : 1 417 413 000
                                                     Cont.-rod travelmm: 0.30...0.70
Inlet press., bar : 1.00
                                                     Governor-spring reload
                                                     Notch setting x : 3.50
Calibrating nozzle-holder
                   : 0 681 343 009
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
                                                     1st version
Opening
pressure, bar : 172...175
                                                     Speed
                                                                   1/min: 1400
                                                     Del.quantity cm3/: 63.0...64.0
1000H.: (61.0...66.0)
Dispersion cm3/: 3.00
Test inj. tubing : 1 680 750 014
                                                                  1000H.: (4.50)
Outside diameter
x Wall thickness
                                                     HIGHEST RATED SPEED
                   : 6.00X2.00X600
x Length mm
                                                     1st version
                                                     Control-lever
(A) Injection pump setting values
    Insp. values in parentheses
                                                      position degrees: 64...72
    Set constant delivery quant.
                                                     Testing:
    per values
                                                     1st c-rod trav.mm: 8.70
                                                       Speed 1/min: 1440...1445
START OF DELIVERY
Test pressure, bar: 25...27
                                                     2nd c-rod trav.mm : 4.00
                                                     Speed 1/min: 1473...1486
3rd c-rod trav.mm: 4.00
Speed 1/min: 1510...1540
                   : 2.15...2.25
Prestroke mm
                   : (2,10...2.30)
Contr.-rod trav.mm: 9.00...12.00
                                                     4th speed 1/min: 1570
Cam sequence : 1- 5- 3- 6- 2- 4
                                                       C-rod trav.mm : 0.30...1.40
                                                     LOWEST RATED SPEED I
                                                     Control-lever
```

```
position degrees: -3
Setting point w/out aux. spring
             1/min : 350
Speed
Contr.-rod trav.mm: 6.80
Testing:
              1/min : 100
Speed
C-rod trav.mm min: 19.50
              1/min : 350
Speed
C-rod trav.mm
                     : 6.70...6.90
C-rod trav.mm
                     : 2.00
             1/min : 450...510
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed
              1/min : 1400
  C-rod trav.mm : 9.70...9.80
2nd speed 1/min: 600
  C-rod trav.mm : 9.90...10.10
FUEL-DELIVERY CHARACTERISTICS
1st version
              1/min : 600
Speed
Del.quantity cm3/: 51.0...53.0
              1000H.: (49.0...55.0)
              1/min : 850
Speed
Del.quantity cm3/: 56.0...58.0
1000H.: (53.5...60.5)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 8.70
              1/min : 1440...1445
Speed
STARTING FUEL DELIVERY
Speed
              1/min : 100
Del.quantity cm3/: 78.0...88.0
1000H.: (75.0...91.0)
Contr.-rod trav.mm: 15.00...15.40
LOW IDLE
              1/min : 350
Speed
Contr.-rod trav.mm: 6.50...7.10
Del.quantity cm3/: 10.0...12.0
1000H.: (8.0...14.0)
Dispersion cm3/: 2.00
1000H.: (-)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : LIE 8,4 A : 09.10.87 : 28.8.87 Calibrating oil : ISO-4113

Combination no. : 0 400 876 322

Injection pump

Pump designation : PES6A95D41ORS2689 EP type number : 0 410 896 916

Governor Governor design. : RSV400...1000A1C2187

: 0 420 232 387 Governer no.

Customer-spec. information Customer : LIEBHERR

Engine : D906 NA

1st version kW : 112.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 40...45

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 00%

Outside diameter x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY Test pressure, bar: 25...27

: 2.70...2.80 Prestroke mm

: (2.65...2.85)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 1st c-rod trav.mm: 8.70 Speed 1/min: 1040...1050 2nd c-rod trav.mm : 4.00 1/min: 1050...1080 Speed 3rd c-rod trav.mm: 4.00 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Speed 1/min: 1090...1120 4th speed 1/min: 1230 C-rod trav.mm : 0.30...1.40 START OF DELIVERY DIFFERENCE LOWEST RATED SPEED I betw.c-rod trav.mm: 8.50...9.50 Control-lever & c-rod tray max. : 21.0 Difference CS : 4.00...5.00 position degrees: 20...28 Setting point w/out aux. spring 1/min : 400 BASIC SETTING Contra-rod trav.mm: 6.0 1st speed 1/mi: 1000 Testing: 1/min : 100 Speed Contr.-rod trav.mm: 9.70...9.80 C-rod trav.mm min : 19.50 1/min : 400 Speed Del.quantity cm3/: 8.1...8.3 C-rod trav.mm : 6.40...6.60 C-rod trav.mm : 2.00 1/min : 530...590 100H.: (7.9...8.5) Speed Dispersion cm3/ : 0.3 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1000 100H.: (0.6) C-rod trav.mm : 9.70...9.80 2nd speed 1/min : 500 C-rod trav.mm : 9.70...9.90 2nd speed 1/min: 400.0 Contr.-rod trav. m: 6.4...6.6 Del.quantity cm3/: 1.0...1.6 10UH.: (0.7...1.8) Dispersion cm3/: 0.3 FUEL-DELIVERY CHARACTERISTICS 100H.: (0.5) 1st version SLEEVE POSITION 1/min : 600 Speed Del.quantity cm3/: 70.0...73.0 1000H.: (67.5...75.5) Control-lever position Degree: -3 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 ROTATIONAL-SPEED LIMITATION Governor-spring reload Notch setting x : 4.00 1st version 1mm control-rod travel less than FULL-LOAD DELIV. AT FULL-LOAD STOP full-load trav.mm: 8.70 1st version Speed 1/min : 1040...1050 1/min: 1000 Speed Del.quantity cm3/: 81.0...83.0 STARTING FUEL DELIVERY 1000H.: (79.0...85.0) cm3/ : 3.50 1000H.: (6.00) Dispersion Speed 1/min : 100 Del.quantity cm3/: 120.0...130.0 1000H.: (117.0...133.0) Contr.-rod trav.mm: 19.50...21.00 HIGHEST RATED SPEED 1st version LOW IDLE Control-lever position degrees: 46...54 1/min : 400 Speed Contr.-rod trav.mm: 6.40...6.60 Testing:

H28

Del.quantity cm3/: 10.0...16.0 1000H.: (7.5...18.5) Dispersion cm3/: 3.50 1000H.: (5.50) Remarks: •

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 6.0 C 1 : G9.10.87 : 10.85 Calibrating oil : ISO-4113

Combination no. : 0 400 876 334

Injection pump

Pump designation : PES6A90D410RS2710-1 EP type number : 0 410 896 084

Governor

Governor design. : RSV350...750A0C2006-

: 0 420 232 454 Governer no.

Customer-spec. information Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 54.0 1/min: 1500 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 2.25...2.35 Prestroke mm : (2.20...2.40)

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
BASIC SETTING
1st speed
               1/mi: 700
Contr.-rod trav.mm: 12.20...12.30
Del.quantity cm3/: 6.4...6.5
              100H.: (6.2...6.7)
Dispersion
              cm3/:0.3
              100H.: (0.5)
              1/min: 350.0
2nd speed
Contr.-rod trav. m: 8.2...8.4
Del.quantity cm3/: 0.6...1.2
              100H.: (0.4...1.4)
              cm3/: 0.2
100H.: (0.4)
Dispersion
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
              1/min: 700
Speed
Del.quantity cm3/: 64.0...65.0
             1000H.: (62.0...67.0)
cm3/: 3.00
1000H.: (5.00)
Dispersion
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 28...36
Testing:
1st c-rod trav.mm : 11.20
Speed 1/min : 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 775...788
4th speed 1/min: 900
 C-rod tray.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
position degrees: 16...24
Setting point w/out aux. spring
            1/min : 350
Speed
Contr.-rod trav.mm: 8.3
Testing:
J03
```

Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 350 C-rod trav.mm: 8.20...8.40 C-rod trav.mm: 2.00 Speed 1/min: 380...420

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 78.0...88.0 1000H:: (75.0...91.0)

Remarks:

Observe VDT-I-420/120

APPLICATION Generator

```
: 1- 8- 5- 10- 3- 7-
6- 11- 2- 9- 4- 12
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence
Note inst. in remarks column
                    : SSC 38.1 A1
: 09.10.87
Test sheet
                                                       SD ang. spacing CS: 0-37.5-60-97.5-120-
Edition
                                                                             157.5-180-217.5-240-
Superceeded
                                                                             277.5-300-337.5
Calibrating oil
                    : ISO-4113
                                                       Tolerance + - 0
                                                                           : 0.50 (0.75)
Combination no.
                    : 0 401 830 712
                                                       SD mark cyl. no. : 1
Injection pump
                    : PE12P130A528/6LS3090
                                                       BASIC SETTING
Pump designation
                    : 0 401 830 706
                                                                     1/mi: 750
EP type number
                                                       1st speed
Governor
Governor design. : RQV300...750PA874
                                                       Contr.-rod trav.mm: 13.80...13.90
                    : D 421 813 663
Governer no.
                                                       Del.quantity cm3/: 34.8...35.1
Customer-spec. information
                                                                     100H.: (34.4...35.4)
Customer
                    : SSCM
Engine
                    : VD 25-V 12
                                                       Dispersion
                                                                     cm3/:0.6
1st version kW : 632.0
                                                                     100H.: (1.0)
              1/min: 1500
Speed
                                                       2nd speed
                                                                     1/min: 300.0
TEST BENCH REQUIREMENTS
                                                       Contr.-rod trav. m: 5.4...5.8
                                                       Del.quantity cm3/: 1.7...2.3
100H.: (1.3...2.7)
Dispersion cm3/: 1.0
100H.: (1.4)
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
Inlet press., bar : 1.50
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 300
Calibrating nozzle-holder
                                                      Sleeve travel mm: 1.10...1.30

2nd speed 1/min: 600

Sleeve travel mm: 5.10...5.50

3rd speed 1/min: 750
             : 1 688 901 019
 assembly
Opening
 pressure, bar : 207...210
                                                         Sleeve travel mm: 7.40...7.80
Test ini. tubing : 1 680 750 067
                                                       SLEEVE POSITION
                                                       Control-lever position
Outside diameter
                                                                    Degree: -1
1/min: 790
x Wall thickness
                    : 6.00x1.50x1000
                                                       Cont.-rod travelmm: 15.20...17.80
x Length mm
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                       1st version
    per values
                                                                     1/min: 750
                                                       Speed
                                                       Del.quantity cm3/: 348.0...351.0
                                                                    1000H.: (344.5...354.5)
cm3/: 6.00
1000H.: (10.00)
START OF DELIVERY
Test pressure, bar: 25...27
                                                       Dispersion
Prestroke mm
                    : 2.80...2.90
                                                      HIGHEST RATED SPEED
                    : (2,75...2.95)
J04
```

1st version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm : 12.80 1/min: 790...800 Speed 2nd s-rod trav.mm : 4.00 Speed 1/min : 850...880 1/min : 950 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: Speed 1/min: 100 C-rod trav.mm min: 7.10 Speed 1/min: 300 : 5.40...5.80 C-rod trav.mm CONSTANT REGULATION 1/min : 330...440 Speed SWITCH-OVER POINT Speed 1/min : 250 (270) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 12.80 Speed 1/min: 790...800 Speed LOW IDLE 1/min : 300 Speed Contr.-rod trav.mm: 5.40...5.80 Del.quantity cm3/: 17.0...23.0 1000H.: (13.0...27.0) Dispersion cm3/: 10.00 1000H.: (14.00) Remarks: APPLICATION

Navy

```
: 1- 8- 5- 10- 3- 7-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence
                                                                          6- 11- 2- 9- 4- 12
Note inst. in remarks column
                   : SSC 38.1 B
: 09.10.87
Test sheet
                                                     SD ang. spacing CS: 0-37.5-60-97.5-120-
157.5-180-217.5-240-
Edition
Superceeded
                                                                           277.5-300-337.5
                   : ISO-4113
Calibrating oil
                                                     Tolerance + - 0
                                                                        : 0.50 (0.75)
                   : 0 401 830 713
Combination no.
                                                     SD mark cyl. no. : 1
Injection pump
                   : PE12P130A520/6LS3181
                                                     BASIC SETTING
Pump designation
                    : 0 401 830 707
EP type number
                                                                  1/mi: 750
                                                     1st speed
Governor
Governor design. : RQV300...750PA874
                                                     Contr.-rod trav.mm: 13.90...14.00
                   : 0 421 813 663
Governer no.
                                                     Del.quantity cm3/: 44.8...45.2
Customer-spec. information
                                                                   100H.: (44.4...35.4)
Customer
                   : SSCM
Engine
                    : UD 25-V 12
                                                     Dispersion
                                                                   cm3/:0.6
1st version kW : 632.0
                                                                   100H.: (1.0)
              1/min: 1500
Speed
                                                     2nd speed
                                                                   1/min: 300.0
                                                    Contr.-rod trav. m: 4.4...4.8

Del.quantity cm3/: 1.7...2.3

100H.: (1.3...2.7)

Dispersion cm3/: 1.0

100H.: (1.4)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                    : 38...42
Overflow valve
                    : 1 417 413 925
                                                     (B) Setting of injection pump with
                                                         externally-mounted governor
Inlet press., bar: 1.50
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 300
Calibrating nozzle-holder
 assembly
           : 0 681 443 022
                                                       Sleeve travel mm: 1.10...1.30
                                                     2nd speed
                                                                 1/min: 600
                                                       Sleeve travel mm: 5.10...5.50
Opening
                                                                  1/min: 750
pressure, bar : 172...175
                                                     3rd speed
                                                       Sleeve travel mm: 7.40...7.80
Test inj. tubing : 1 680 750 060
                                                     SLEEVE POSITION
                                                     Control-lever position
                                                                  Degree: -1
Outside diameter
                                                                   17min: 790
x Wall thickness
                                                     Cont.-rod travelmm: 15.20...17.80
                   : 8,00x2,00x1000
x Length mm
                                                     FULL-LOAD DELIV, AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     1st version
                                                                   1/min: 750
    per values
                                                     Speed
                                                     Del.quantity cm3/: 448.0...452.0
                                                                  1000H.: (444.5...354.5)
START OF DELIVERY
Test pressure, bar: 25...27
                                                                  cm3/ : 6.00
                                                     Dispersion
                                                                  1000H.: (10.00)
                   : 2.80...2.90
Prestroke mm
                   : (2.75...2.95)
                                                     HIGHEST RATED SPEED
J06
```

```
1st version
Control-lever
 position degrees: 62...70
Testing:
1st c-rod trav.mm : 12.90
            1/min: 790...800
  Speed
2nd c-rod trav.mm : 4.00
             1/min: 850...880
  Speed
             1/min: 950
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...16
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 6.10
Speed 1/min: 300
                    : 4.40...4.80
C-rod trav.mm
CONSTANT REGULATION
             1/min: 330...440
Speed
SWITCH-OVER POINT
Speed
             1/min : 250 (270)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
full-load trav.mm: 12.90
Speed 1/min: 790...800
Speed
LOW IDLE
             1/min : 300
Speed
Contr.-rod trav.mm: 4.40...4.80
Del.quantity cm3/: 17.0...23.0
1000H.: (13.0...27.0)
Dispersion cm3/: 10.00
             1000H.: (14,00)
Remarks:
APPLICATION
Navy
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                           : 1-5-3-6-2-4
                                                       Cam sequence
Note inst. in remarks column
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : DAF 11.6M14
: 09.10.87
Test sheet
Edition
                    : 10.8.87
Superceeded
Calibrating oil
                    : ISO-4113
                                                       BASIC SETTING
                    : 0 401 846 542
Combination no.
                                                       1st speed
                                                                      1/mi: 600
                                                       Contr.-rod trav.mm: 11.40...11.50
Injection pump
Pump designation : PE6P100A320R$384-1
                    : 0 411 806 189
                                                       Del.quantity cm3/: 9.8...10.0
EP type number
Governor
Governor design. : RQ225/1000PA868
                                                                     100H.: (9.6...10.2)
Governer no.
                    : 0 421 801 403
                                                      Dispersion
                                                                     cm3/:0.3
Customer-spec. information
                    : DAF
                                                                     100H.: (0.6)
Customer
                                                      2nd speed 1/min: 250.0

Contrared trav. m: 7.5...727

Del.quantity cm3/: 0.9...1.3

100H.: (0.6...1.5)

Dispersion cm3/: 0.3
                    : DKDL 1160 SB 220
Engine
1st version kW : 220.0
Speed
              1/min: 2000
                                                                     100H.: (0.5)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                       SLEEVE POSITION
                    : 38...42
                                                       Control-lever position
                                                                    Degree: -1
1/min: 550
Overflow valve
                                                       Speed
                    : 1 417 413 025
                                                      Cont.-rod travelmm: 15.20...16.40
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
                                                       1st version
Calibrating nozzle-holder
                   : 0 681 343 009
                                                       Speed
                                                                     1/min: 600
 assembly
                                                      Del.quantity cm3/: 98.0...100.0
1000H: (96.0...102.0)
Dispersion cm3/: 3.50
Opening
pressure, bar
                    : 172...175
                                                                    1000H.: (6.00)
                    : 1 680 750 015
                                                      HIGHEST RATED SPEED
Test inj. tubing
                                                      1st version
Outside diameter
x Wall thickness
                    : 6.00x1.50x600
x Length mm
                                                      Setting point:
                                                      Speed
                                                                 1/min : 550
                                                      Contr.-rod trav.mm: 15.8
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                      Testing:
                                                      1st c-rod trav.mm : 9.60
    per values
                                                                   1/min : 1045...1060
                                                         Speed
                                                      2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                        Speed 1/min: 1100...1130
th speed 1/min: 1250
Test pressure, bar: 25...27
                                                       4th speed
                                                                         : 0.00...1.00
                    : 3.20...3.30
                                                         C-rod trav.mm
Prestroke mm
                    : (3,15,...3,35)
Contr.-rod trav.mm: 9.00...12.00
                                                      LOWEST RATED SPEED I
108
```

```
Setting point W/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 7.6
Testing:
              1/min : 100
Speed
C-rod trav.mm min: 8.40
             1/min : 250
Speed
                  : 7.50...7.70
C-rod trav.mm
              nm : 2.00
1/min : 345...385
C-rod trav.mm
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 600
  C-rod trav.mm
                     : 11.40...11.50
2nd speed 1/min : 1000
  C-rod trav.mm : 10.60...10.80
3rd speed 1/min: 825
C-rod trav.mm : 11.10...11.30
4th speed 1/min : 900
  C-rod trav.mm : 10,80...11.10
FUEL-DELIVERY CHARACTERISTICS
1st version
              1/min : 1000
Speed
Del.quantity cm3/ : 93.0...97.0
              1000H.: (90,5...99.5)
SETTING CONTROL-ROD STOP
Speed
              1/min : 600
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 9.60
            1/min: 1045...1060
Speed
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 180.0...220.0
1000H.: (176.0...224.0)
Contr.-rod trav.mm: 19.50...21.00
LOW IDLE
              1/min : 250
Speed
Contr.-rod trav.mm: 7.50...7.70
Del.quantity cm3/: 9.0...13.0
1000H.: (6.5...15.5)
Dispersion cm3/: 3.50
              1000H.: (5.50)
```

Remarks:

J09

Note inst. in remarks column Test_sheet : RVI 11,9 A1 : 09.10.87 Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 0 401 846 543 Injection pump Pump designation : PE6P110A720RS380 EP type number : 0 411 816 126 Governor Governor design. : RQV250...1000PA434-4 Governer no. : 0 421 813 659 Governer no. Customer-spec. information : RVI Customer : BSR 36 F Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values START OF DELIVERY Test pressure, bar: 25...27 : 2.80...2.90 Prestroke mm : (2.75...2.95) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2-

BOSCH INJ. PUMP TEST SPECIFICATIONS

```
Testing:
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                        1st c-rod trav.mm : 14.40
                                                          Speed 1/min: 1040...1050
                                                        2nd c-rod trav.mm: 4.00
                                                          Speed 1/min: 1190...1220
th speed 1/min: 1300
SD mark cyl. no. : 1
                                                        4th speed
BASIC SETTING
                                                          C-rod trav.mm : 0.00...1.00
                1/mi: 1000
                                                        LOWEST RATED SPEED I
1st speed
                                                        Control-lever
Contr.-rod trav.mm: 15.40...15.50
                                                         position degrees: 11...19
Del.quantity cm3/: 19.4...19.7
                                                        Testing:
                                                                     1/min : 100
                                                        Speed
               100H.: (19.1...19.9)
                                                        C-rod trav.mm min: 9.30
                                                                     1/min : 250
                                                        Speed
Dispersion
                                                                        : 7.60...8.00
               cm3/:0.4
                                                        C-rod trav.mm
               100H.: (0.7)
                                                        CONSTANT REGULATION
                                                                    1/min : 345...465
                                                        Speed
2nd speed
               1/min: 250.0
Contr.-rod trav. m: 7.6...8.0

Del.quantity cm3/: 1.4...1.9

100H.: (1.1...2.1)

Dispersion cm3/: 0.4
                                                        Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA)
               100H.: (0.7)
                                                        1st version
                                                        Setting
                                                                     1/min : 500
(B) Setting of injection pump with
                                                        Speed
    externally-mounted governor
                                                       Pressure
                                                                   hPa : 900
                                                        Contr.-rod trav.mm: 15.40...15.50
SLEEVE TRAVELS
1st speed 1/min: 300
Sleeve travel mm: 1.70...2.00
2nd speed 1/min: 850
                                                        Measurement
                                                                     1/min : 500
                                                        Speed
  Sleeve travel mm: 6,00...6.40
                                                        1st pressure hPa : -
                                                                            : 12.80...13.00
3rd speed 1/min: 1000
                                                          C-rod trav.mm
  Sleeve travel mm: 7.30...7.50
                                                        2nd pressure hPa : 430
                                                        C-rod trav.mm : 15.40...15.50
3rd pressure hPa : 300
SLEEVE POSITION
Control-lever position
                                                          C-rod trav.mm
                                                                           : 13.90...14.20
             Degree: -1
               17min: 1100
Speed
                                                       FUEL-DELIVERY CHARACTERISTICS
Cont.-rod travelmm: 15.20...17.80
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                        1st version
                                                       Charge press. hPa : 900
                                                                     1/min : 700
1st version
                                                       Speed
                                                       Del.quantity cm3/: 198.0...204.0
1000H.: (195.0...207.0)
               1/min: 1000
Speed
Charge press. hPa : 900
Del.quantity cm3/: 194.0...197.0
1000H.: (191.5...199.5)
                                                       Charge press. hPa : -
                                                                     1/min: 500
                                                        Speed
                                                       Del.quantity cm3/: 141.0...144.0
             cm3/ : 4.00
Dispersion
                                                                     1000H.: (138.5...146.5)
              1000H.: (7.50)
HIGHEST RATED SPEED
                                                       ROTATIONAL-SPEED LIMITATION
1st version
Control-lever
                                                       1st version
 position degrees: 62...70
```

1mm control-rod travel less than

full-load trav.mm: 14.40 Speed 1/min: 1040...1050

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ENA 11.9
Edition : 09.10.87
Superceeded : 28.8.87 : ENA 11,9 A : 09.10.87 Calibrating oil : ISO-4113 Combination no. : 0 401 846 550 Injection pump Pump designation : PE6P12OA32ORS257 EP type number : 0 411 826 075 Governor Governor design. : RQV250...1050PA808-2 Governer no. : 0 421 813 666 Customer-spec. information Customer : ENASA Engine : 96 T1 CX TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder assembly : 1 688 901 019 Opening pressure, bar : 207...210 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness : 6.00x1.50x1000 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values START OF DELIVERY Test pressure, bar: 25...27

: 2.80...2.90 Prestroke mm

(2.75...2.95) Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-

2- 4

```
1st version
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                           Control-lever
                                                            position degrees: 43...51
SD mark cyl. no. : 1
                                                           Testing:
                                                           1st c-rod trav.mm : 11.30
Speed 1/min : 1090...1100
2nd c-rod trav.mm : 4.00
BASIC SETTING
                                                                        1/min : 1180...1210
             1/mi: 1030
                                                             Speed
1st speed
                                                           4th speed 1/min : 1300
Contr.-rod trav.mm: 12.30...12.40
                                                             C-rod trav.mm : 0.00...1.00
                                                           LOWEST RATED SPEED I
Del.quantity cm3/; 24.6...24.8
                                                           Control-lever
                100H.: (24.3...25.1)
                                                            position degrees: 8...16
Dispersion
                cm3/:0.5
                                                           Testing:
                                                                         1/min : 100
                                                           Speed
                100H.: (0.9)
                                                           C-rod trav.mm min : 7.20
                                                           Speed 1/min : 250
2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.6...5.8
Del.quantity cm3/: 1.7...2.3
100H.: (1.4...2.6)
                                                           C-rod trav.mm : 5.60...5.80
                                                           CONSTANT REGULATION
                                                                        1/min : 250...370
                                                           Speed
                cm3/: 0.8
100H.: (1.2)
Dispersion
                                                           Adjustment test, manifold-pressure
                                                            compensator (LDA, ADA, ALDA)
(B) Setting of injection pump with
     externally-mounted governor
                                                           1st version
                                                           Setting
SLEEVE TRAVELS
1st speed 1/min: 250
Steeve travel mm: 1.00...1.40
2nd speed 1/min: 350
                                                                       1/min : 500
hPa : 900
                                                           Speed
                                                           Pressure
                                                           Contr.-rod trav.mm: 12.30...12.40
  Sleeve travel mm: 1.70...2.30
3rd speed 1/min: 700
                                                           Measurement
Sleeve travel mm: 4.50...5.10
4th speed 1/min: 1095
Sleeve travel mm: 8.20...8.40
                                                           Speed
                                                                         1/min : 500
                                                           1st pressure hPa : -
                                                             C-rod trav.mm : 8.20...9.60
5th speed 1/min: 1185
  Sleeve travel mm: 9.20...9.60
                                                           2nd pressure hPa : 570
                                                             C-rod trav.mm : 11.60...11.70
SLEEVE POSITION
                                                           3rd pressure hPa : 280
Control-lever position
                                                             C-rod trav.mm
                                                                                : 9.90...10.10
Degree: -1
Speed 1/min: 1115
Cont.-rod travelmm: 15.20...17.80
                                                           FUEL-DELIVERY CHARACTERISTICS
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                           1st version
                                                           Charge press. hPa : 900
                                                                         1/min : 650
1st version
                                                           Speed
                                                           Del.quantity cm3/: 229.0...235.0
1000H:: (226.0...2388.0
                1/min: 1030
Speed
Charge press. hPa: 900
Del.quantity cm3/: 246.0...248.0
1000H.: (243.0...251.0)
Dispersion cm3/: 5.00
                                                           Charge press. hPa : -
                                                                         1/min : 500
                                                           Speed
                                                           Del.quantity cm3/: 141.0...143.0
              1000H.: (9.00)
                                                                         1000H.: (138.0...146.0)
HIGHEST RATED SPEED
                                                           ROTATIONAL-SPEED LIMITATION
```

1st version 1mm control-rod travel less than

full-load trav.mm: 11,30 Speed 1/min: 1090...1100

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 135.0...165.0 1000H.: (131.0...169.0)

100011. (131.0.1.109.0)

.

Remarks:

APPLICATION

Special-purpose vehicle

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                           SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
Test sheet
                      : VOL 10.0 0
: 09.10.87
                                                           SD mark cyl. no. : 1
Edition
                      : 12.6.87
                                                           BASIC SETTING
Superceeded
                     : ISO-4113
Calibrating oil
                                                           1st speed
                                                                            1/mi: 700
Combination no.
                      : 0 401 846 745
                                                           Contr.-rod trav.mm: 12.30...12.40
Injection pump
Pump designation : PE6P110A320RS3080
                                                           Del.quantity cm3/: 16.7...16.9
EP type number
                     : 0 411 816 722
                                                                           100H.: (16.4...17.2)
Governor
Governor design. : RQV250...1100PA589
                     : 0 421 813 307
Governer no.
                                                           Dispersion
                                                                           cm3/:0.4
                                                                           100H.: (0.7)
Customer-spec. information
Customer
                     : VOLVO
                                                           2nd speed 1/min: 250.0
Contr.-rod trav. m: 3.9...4.1
Del.quantity cm3/: 1.5...1.9
100H.: (1.2...2.1)
Dispersion cm3/: 0.3
                      : TD100GA
Engine
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                                           100H.: (0.6)
                      : 38...42
                                                           (B) Setting of injection pump with
Overflow valve
                                                                externally-mounted governor
                      : 1 417 413 025
                                                           SLEEVE TRAVELS
                                                           1st speed 1/min: 250
Inlet press., bar : 1.50
                                                             Sleeve travel mm: 1.20...1.30 d speed 1/min: 370
Calibrating nozzle-holder
                                                           2nd speed
               : 0 681 343 009
                                                             Sleeve travel mm: 2.60...3.00
 assembly
                                                           3rd speed 1/min: 430
Sleeve travel mm: 3.50...3.90
4th speed 1/min: 1160
Sleeve travel mm: 8.10...8.30
Sth speed 1/min: 1210
Opening
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
                                                             Sleeve travel mm: 9.40...9.60
Outside diameter
                                                           SLEEVE POSITION
x Wall thickness
                                                           Control-lever position
x Length mm
                     : 6.00x1.50x600
                                                                         Degree: -1
                                                                           17min: 1180
                                                           Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                           FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                           1st version
                                                                           1/min: 700
START OF DELIVERY
                                                           Speed
                                                          Charge press. hPa: 900
Del.quantity cm3/: 167.0...169.0
1000H.: (164.0...172.0)
Dispersion cm3/: 4.00
Test pressure, bar: 25...27
                     : 3.50...3.60
Prestroke mm
                      : (3.45...3.65)
Contr.-rod trav.mm: 9.00...12.00
                                                                         1000H.: (7.50)
                     : 1-5-3-6-2-4
Cam sequence
                                                           HIGHEST RATED SPEED
```

1st version Control-lever position degrees: 59...76 Testing: 1st c-rod trav.mm : 11.30 1/min: 1160...1170 Speed 2nd c-rod trav.mm: 4.00 1/min : 1220...1250 1/min : 1350 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 4...12 Testing: 1/min : 100 Speed C-rod trav.mm min : 5.30 Speed 1/min : 250 C-rod trav.mm : 3.90...4.10 CONSTANT REGULATION 1/min : 270...380 Speed Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Contr.-rod trav.mm: 12.30...12.40 Measurement 1/min : 500 Speed 1st pressure hPa : 9.80...10.00 C-rod trav.mm : 610 2nd pressure hPa C-rod trav.mm : 12.10...12.20 : 280 3rd pressure hPa C-rod trav.mm : 10.10...10.30 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 121.0...124.0 1000H.: (118.5...126.5) ROTATIONAL-SPEED LIMITATION 1st version

1mm control-rod travel less than

full-load trav.mm: 11.30 Speed 1/min : 1160...1170

STARTING FUEL DELIVERY

Speed 1/min: 100
Del.quantity cm3/: 160.0...190.0
1000H.: (156.0...196.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

1/min: 250 Speed Contr.-rod trav.mm: 3.90...4.10 Del.quantity cm3/: 15.0...19.0 1000H.: (12.5...21.5) Dispersion cm3/: 3.00 1000H.: (6.00)

Remarks: Delivery-valve spring pre-tension = 2.40...2.60 mm. Permissible alteration from 2.20...2.90

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 1-5- 3- 6- 2- 4
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - ^{\circ}: 0.50 (0.75)
Test sheet
                    : VOL 10,0 03
Edition
                    : 09.10.87
Superceeded
                   : 12.6.87
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no.
                   : 0 401 846 768
                                                      BASIC SETTING
Injection pump
                                                      1st speed
                                                                     1/mi: 700
Pump designation : PE6P110A320R$3080-1
EP type number
                                                      Contr.-rod trav.mm: 13.20...13.30
                   : 0 411 816 734
Governor
Governor design. : RQV250...1025PA589
                                                      Del.quantity cm3/: 17.9...18.2
                   : 0 421 813 332
Governer no.
                                                                    100H.: (17.7...18.5)
Customer-spec. information
Customer
                   : VOLVO
                                                      Dispersion
                                                                    cm3/:0.4
                    : TD100FA
Engine
                                                                    100H.: (0.7)
                  : 220.0
1st version kW
                                                      2nd speed
                                                                    1/min: 250.0
              1/min: 2050
                                                      Contr.-rod trav. m: 4.3...4.5
Speed
                                                      Del.quantity cm3/: 1.5...1.9
100H.: (1.2...2.1)
TEST BENCH REQUIREMENTS
                                                                    cm3/ : 0.3
                                                      Dispersion
Calibrating-oil inlet temp. DC
                                                                    100H.: (0.6)
                    : 38 ... 42
                                                      (B) Setting of injection pump with
Overflow valve
                                                          externally-mounted governor
                    : 1 417 413 025
                                                      SLEEVE TRAVELS
Inlet press., bar : 1.50
                                                      1st speed 1/min: 250
                                                        Sleeve travel mm: 1.20...1.30
                                                      2nd speed 1/min: 350
Calibrating nozzle-holder
                   : 0 681 343 009
                                                        Sleeve travel mm: 2.20...2.80
 assembly
                                                      3rd speed 1/min: 430
Sleeve travel mm: 3.50...3.90
Opening
                   : 172...175
                                                                   1/min: 1080
pressure, bar
                                                      4th speed
                                                        Sleeve travel mm: 8.40...8.50
                                                                   1/min: 1150
                                                      5th speed
                                                        Sleeve travel mm: 9.50...9.80
Test inj. tubing
                   : 1 680 750 015
Outside diameter
                                                      SLEEVE POSITION
x Wall thickness
                                                      Control-lever position
                   : 6,00x1,50x600
                                                                   Degree: -1
1/min: 1080
x Length mm
                                                      Speed
(A) Injection pump setting values
                                                      Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
    Set constant delivery quant.
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
START OF DELIVERY
                                                      Speed
                                                                    1/min: 700
                                                     Charge press. hPa: 900
Del.quantity cm3/: 179.5...182.5
1000H.: (177.0...185.0)
Dispersion cm3/: 4.00
1000H.: (7.50)
Test pressure, bar: 25...27
                    : 3.00...3.10
Prestroke mm
                    : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
J18
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 12.20
             1/min: 1085...1095
  Speed
2nd c-rod trav.mm : 4.00
              1/min : 1160...1190
1/min : 1300
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 5...13
Testing:
Speed 1/min: 100
C-rod trav.mm min: 5.80
Speed 1/min: 250
                     : 4.30...4.50
C-rod trav.mm
CONSTANT REGULATION
             1/min : 270...380
Speed
Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA)
1st version
Setting
              1/min : 500
Speed
              hPa : 900
Pressure
Contr.-rod trav.mm: 13.20...13.30
Measurement
             1/min : 500
Speed
1st pressure hPa : -
  C-rod trav.mm
                     : 10.60...10.80
2nd pressure hPa : 670
                    : 13.00...13.10
: 310
  C-rod tray.mm
3rd pressure hPa
  C-rod trav.mm
                     : 11.00...11.20
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
Speed 1/min : 1000
Del.quantity cm3/: 171.0...177.0
1000H.: (169.0...179.0)
Charge press. hPa : -
              1/min : 700
Speed
Del.quantity cm3/: 132.0...135.0
1000H.: (129.5...137.5)
```

```
Remarks:
```

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.20
Speed 1/min: 1085...1095

STARTING FUEL DELIVERY

Speed 1/min: 100
Del.quantity cm3/: 150.0...200.0
1000H.: (146.0...204.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min: 250
Contr.-rod trav.mm: 4.30...4.50
Del.quantity cm3/: 15.0...19.0

Speed 1/min: 250 Contr.-rod trav.mm: 4.30...4.50 Del.quantity cm3/: 15.0...19.0 1000H.: (12.5...21.5) Dispersion cm3/: 3.00 1000H.: (6.00)

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90

J19

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : VOL 10.0 Q6
Edition
                   : 09.10.87
Superceeded
                   : 23.9.86
Calibrating oil
                  : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no. : 0 401 846 784
                                                      BASIC SETTING
                                                                     1/mi: 700
Injection pump
                                                      1st speed
Pump designation : PE6P110A320RS3108V
                                                      Contr.-rod trav.mm: 13.70...13.80
EP type number
                  : 0 411 816 737
Governor
Governor design. : RQV250...1100PA649
Governer no. : 0 421 813 346
                                                      Del.quantity cm3/: 18.0...18.2
                                                                    100H.: (17.7...18.5)
Customer-spec. information
                                                                    cm3/:0.4
Customer
                   : VOLVO
                                                      Dispersion
                  : B10/THD101FD
                                                                    100H.: (0.7)
Engine
1st version kW : 210.0
                                                                    1/min: 250.0
                                                      2nd speed
                                                     Contr.-rod trav. m: 5.3...5.5

Del.quantity cm3/: 3.0...3.4

100H.: (2.7...3.6)

Dispersion cm3/: 0.3
Speed
              1/min: 2200
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                                    100H.: (0.6)
                    : 38...42
                                                      (B) Setting of injection pump with
Overflow valve
                                                          externally-mounted governor
                    : 1 417 413 025
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 250
Sleeve travel mm: 1.10...1.30
Inlet press., bar : 1.50
                                                      2nd speed 1/min: 500
Calibrating nozzle-holder
                   : 0 681 343 009
                                                        Sleeve travel mm: 4.10...4.90
 assembly
                                                                   1/min: 700
                                                      3rd speed
                                                        Sleeve travel mm: 6.30...6.70
Opening
pressure, bar : 172...175
                                                                   1/min: 950
                                                      4th speed
                                                        Sleeve travel mm: 6.30...6.70
                                                      5th speed 1/min: 1100
Sleeve travel mm: 7.00...7.50
Test inj. tubing : 1 680 750 015
Outside diameter
                                                      SLEEVE POSITION
                                                      Control-lever position
x Wall thickness
                  : 6.00x1.50x600
x Length mm
                                                                   Degree: -1
                                                                    17min: 1175
                                                      Speed
                                                      Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
START OF DELIVERY
                                                                    1/min: 700
                                                      Speed
                                                      Charge press. hPa : 1200
Test pressure, bar: 25...27
                                                     Del.quantity cm3/: 180.0...182.0
                    : 3.00...3.10
                                                                   1000H.: (177,0...185.0)
Prestroke mm
                                                                  cm3/ : 4.00
1000H.: (7.50)
                    : (2.95...3.15)
                                                      Dispersion
Contr.-rod trav.mm: 9.00...12.00
J20
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 12.70
  Speed 1/min: 1160...1170
2nd c-rod trav.mm : 4.00
          1/min : 1240...1270
  Speed
4th speed 1/min: 1350
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 7...15
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 6.80
Speed 1/min : 250
           mm : 5.30...5.50
mm : 2.00
1/min : 345...405
C-rod trav.mm
C-rod trav.mm
Speed
Adjustment test, manifold-pressure
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 1200
Pressure
Contr.-rod trav.mm: 13.70...13.80
Measurement
            1/min : 500
Speed
1st pressure hPa : -
                  : 9.60,..9.90
 C-rod trav.mm
2nd pressure hPa : 300
                  : 10.00...10.10
  C-rod trav.mm
3rd pressure hPa : 870
                  : 13.30...13.50
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : -
            1/min : 700
Del.quantity cm3/: 106.0...108.0
            1000H.: (103.0...111.0)
ROTATIONAL-SPEED LIMITATION
1st version
```

J21

1mm control-rod travel less than full-load trav.mm: 12.70 Speed 1/min: 1160...1170 STARTING FUEL DELIVERY Speed 1/min : 100 Del.quantity cm3/: 160.0...190.0 Contr.-rod trav.mm: 20.00...21.00 LOW IDLE Speed 1/min: 250 Contr.-rod trav.mm: 5.30...5.50 Del.quantity cm3/: 30.0...34.0 1000H.: (27.5...36.5) Dispersion cm3/: 3.00 1000H.: (6.00) Remarks: Delivery-valve spring pre-tension = 2.40...2.60 mm. Permissible alteration from 2.20...2.90 Check electrically unlatched starting fuel delivery (EES) with 24 volt.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Prestroke mm
                                                                        : 4.00...4.10
                                                                        : (3.95...4.15)
Note inst. in remarks column
                                                    Contr.-rod trav.mm: 9.00...12.00
                                                    Cam sequence : 6-3-5-2-4-1
Test sheet
Edition
Superceeded
                   : MB 11,0 S 2
                  : 16.10.87
: 23,9.86
                                                    SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 846 829
                                                    SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3835
                                                    BASIC SETTING
EP type number : 0 411 816 749
Governor
                                                    1st speed
                                                                  1/mi: 950
Governor design. : RQ300/950PA827-1K
Governer no. : 0 421 803 093
                                                    Contr.-rod trav.mm: 13.10...13.20
Customer-spec. information
                                                    Del.quantity cm3/: 12.6...12.8
Customer
                   : DAIMLER-BENZ
                                                                   100H.: (12.3...13.0)
Engine
                   : 0M441
                                                                  cm3/:0.4
                                                    Dispersion
1st version kW : 150.0
             1/min: 1900
                                                                   100H.: (0.8)
Speed
TEST BENCH REQUIREMENTS
                                                                  1/min: 300.0
                                                    2nd speed
                                                    Contri-rod trav. m: 8.8...9.0
Calibrating-oil inlet temp. °C
                                                    Del.quantity cm3/: 1.5...2.1
                                                                  100H.: (1.2...2.3)
cm3/: 0.4
100H.: (0.7)
                  : 38...42
                                                    Dispersion
Overflow valve
                   : 1 417 413 025
                                                     (B) Setting of injection pump With
                                                         externally-mounted governor
Inlet press., bar : 1.50
Overflow
                                                    SLEEVE TRAVELS
 quantity min. 1/h: 100...120
                                                    1st speed 1/min: 300
                                                    Sleeve travel mm: 1.60...1.80
2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70
Calibrating nozzle-holder
assembly : 0 681 343 009
                                                                 1/min: 775
                                                    3rd speed
                                                      Sleeve travel mm: 6.50...6.80
Opening
pressure, bar : 172...175
                                                    4th speed 1/min: 950
                                                      Sleeve travel mm: 7.50...7.80
                                                    5th speed 1/min: 1100
Test inj. tubing : 1 680 750 015
                                                      Sleeve travel mm: 9.50...10.00
Outside diameter
                                                    SLEEVE POSITION
x Wall thickness
                                                    Control-lever position
                   : 6.00x1.50x600
x Length mm
                                                                 Degree: -2
                                                                  17min: 600
                                                    Cont.-rod travelmm: 14.70...15.70
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                    1st version
START OF DELIVERY
                                                    Speed
                                                                  1/min: 950
                                                    Del.quantity cm3/: 126.0...128.0
1000H.: (123.5...130.5)
Test pressure, bar: 25...27
```

```
Dispersion cm3/ : 4.00
               1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 32...40
Setting point:
Speed 1/min: 600
Contr.-rod trav.mm: 15.2
Testing:
1st c-rod trav.mm : 12.10
            1/min: 995...1010
  Speed
2nd c-rod trav.mm : 4.00
  Speed 1/min: 1060...1090
th speed 1/min: 1300
C-rod trav.mm: 0.00...1.50
  Speed
4th speed
LOWEST RATED SPEED I
Setting point W/out aux. spring
              1/min : 300
Speed
Contr.-rod trav.mm: 8.8
Testing:
              1/min : 200
Speed
C-rod trav.mm min: 10.50
Speed 1/min: 300
                  : 8.80...8.90
C-rod trav.mm
                     : 2.00
C-rod trav.mm
Speed 1/min: 450...490
Speed
              1/min : 550
C-rod trav.mm max : 1.80
FUEL-DELIVERY CHARACTERISTICS
1st version
              1/min : 600
Speed
Del.quantity cm3/: 117.0...120.0
1000H.: (114.0...123.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Speed 1/min: 750
Del.quantity cm3/: 120.0...124.0
1000H.: (117.0...127.0)
Dispersion cm3/: 6.00
              1000H.: (9,00)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 12.10
Speed
             1/min : 995...1010
```

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 120.0...140.0

1000H.: (116.0...144.9)

:

Remarks:

123

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11.7 Edition : 09.10.87 Superceeded : 18.9.87 Calibrating oil : ISO-4113 : DAF 11,7 D1

Combination no. : 0 401 846 831

Injection pump

Pump designation : PE6P12OA32OR\$3183-1Y EP type number : 0 411 826 765

Governor

Governor design. : RQ250/1000PA832 : 0 421 801 368 Governer no.

Customer-spec, information Customer : DAF

: WS 282 Engine

1st version kW : 282.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Test in i. tubing : 1 689 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 3.70...3.80 Prestroke mm

: (3.65...3.85) Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-2-4 LOWEST RATED SPEED I Control-lever position degrees: 9...17 Setting point w/out aux. spring Speed 1/min 250 SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50 (0.75) Contr.-rod trav.mm: 6.8 BASIC SETTING Testing: 1/min : 100 Speed 1st speed 1/mi: 850 C-rod trav.mm min: 8.30 1/min : 250 Speed : 6.60...7.00 Contr.-rod trav.mm: 13.10...13.20 C-rod trav.mm mm : 2.00 1/min : 350...390 C-rod trav.mm Del.quantity cm3/: 21.9...22.1 Speed 100H.: (21.6...22.4) TORQUE CONTROL Torque-control curve - 1st version cm3/:0.51/min : 850 Dispersion 1st speed C-rod trav.mm : 13.30...13.40 100H.: (0.9) 2nd speed 1/min : 1000 C-rod trav.mm : 13.20...13.40 2nd speed 1/min: 250.0 Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA) Contr.-rod trav. m: 6.6...7.0 Del.quantity cm3/: 1.4...2.0 100H:: (1.1...2.3) Dispersion cm3/: 0.8 100H:: (1.2) 1st version Setting SLEEVE POSITION 1/min : 600 Speed hPa : 1000 Control-lever position Pressure Degree: -1 Speed 1/min: 550 Cont.-rod travelmm: 15.20...16.40 Contr.-rod trav.mm: 13.10...13.20 Measurement 1/min : 600 Speed FULL-LOAD DELIV. AT FULL-LOAD STOP 1st pressure hPa : -: 10.10...10.30 1st version C-rod trav.mm Speed 1/min: 850 2nd pressure hPa : 570 Charge press. hPa: 1000
Del.quantity cm3/: 219.0...221.0
1000H.: (216.0...224.0)
Dispersion cm3/: 5.00 C-rod trav.mm : 12.40...12.50 3rd pressure hPa : 310 C-rod tray.mm : 10.70...11.00 1000H.: (9.00) FUEL-DELIVERY CHARACTERISTICS HIGHEST RATED SPEED 1st version 1st version Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) Setting point: Speed 1/min: 550 Contr.-rod trav.mm: 15.8 ROTATIONAL-SPEED LIMITATION Testing: 1st c-rod trav.mm : 12.10 Speed 1/min : 1035...1050 1st version 2nd c-rod trav.mm : 4.00 1mm control-rod travel less than 1/min : 1120...115/ 1/min : 1250 Speed full-load trav.mm: 12.10 4th speed 1/min : 1035...1050 C-rod trav.mm : 0.00...1.00 Speed

STARTING FUEL DELIVERY Speed 1/min: 100 Del.quantity cm3/: 260.0...300.0 1000H.: (256.0...304.0) LOW IDLE Speed 1/min: 250 Contr.-rod trav.mm: 6.60...7.00 Del.quantity cm3/: 14.0...20.0 1000H.: (11.0...23.0) Dispersion cm3/: 8.00 1000H.: (12.00) Remarks: :

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
Edition
Superceeded
                   : MB 11.0 L 3
: 09.10.87
Calibrating oil : ISO-4113
                   : 0 401 846 832
Combination no.
Injection pump
Pump designation : PE6P12OA32OLS3815-12
EP type number : 0 411 826 770
Governor
Governor design. : RQ300/1050PA840-1
Governer no. : 0 421 801 418
Customer-spec. information
                   : DAIMLER-BENZ
Customer
                   : 0M 441 A
Engine
1st version kW : 191.0
Speed 1/min: 2100
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C : 38...42
Overflow valve
                   : 1 417 413 025
Inlet press., bar : 1.50
Overflow
 quantity min. 1/h: 100...120
Calibrating nozzle-holder
 assembly : 1 688 901 019
Opening |
 pressure, bar : 207...210
Perforated-plate
 diameter mm
                   : 0,8
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                  : 6.00x1.50x1000
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
    per values
```

START OF DELIVERY Test pressure, bar: 2527 Prestroke mm : 3.603.70 (3.553.75) Contrrod trav.mm: 9.0012.00 (2.00 trav.mm: 6-3-5-2-4-1)	Speed 1/min: 600 Charge press. hPa: 700 Del.quantity cm3/: 190.0192.0 1000H.: (187.0195.0) Dispersion cm3/: 5.00 1000H.: (9.00) HIGHEST RATED SPEED
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) SD mark cyl. no. : 6	1st version Setting point: Speed 1/min : 600 Contrrod trav.mm: 20.0
### BASIC SETTING 1st speed	Testing: 1st c-rod trav.mm : 11.60 Speed 1/min : 10951110 2nd c-rod trav.mm : 4.00 Speed 1/min : 11701200 4th speed 1/min : 1350 C-rod trav.mm : 0.001.50 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min : 300 Contrrod trav.mm: 5.5 Testing: Speed 1/min : 100 C-rod trav.mm min : 6.90 Speed 1/min : 300 C-rod trav.mm
(B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 2.002.20 2nd speed 1/min: 600 Sleeve travel mm: 5.906.10 3rd speed 1/min: 900 Sleeve travel mm: 6.606.80 4th speed 1/min: 1100 Sleeve travel mm: 7.007.40	TORQUE CONTROL Dimension a mm : 0.90 2nd speed 1/min : 1050 C-rod trav.mm : 12.3012.50 3rd speed 1/min : 700 C-rod trav.mm : 13.5013.70 Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA) 1st version
Sth speed 1/min: 1175 Sleeve travel mm: 9.5010.00 SLEEVE POSITION Control-lever position	Setting Speed 1/min: 600 Pressure hPa: 700 Contrrod trav.mm: 13.1013.30 Measurement Speed 1/min: 600 1st pressure hPa: 350 C-rod trav.mm: 11.1011.30 2nd pressure hPa: 550 C-rod trav.mm: 12.7012.90

```
3rd pressure hPa : 780
4th pressure hPa : 13.20...13.30 C-rod tray ---
                     : 13.45...13.55
  C-rod trav.mm
SWITCH-OVER POINT
Speed
              1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1100
              1/min : 1050
Speed
Del.quantity cm3/: 184.0...187.0
              1000H<sub>*</sub>: (181.0...190.0)
Dispersion
               cm3/: 8.00
              1000H.: (12.0)
Charge press. hPa : 1100
Speed 1/min : 700
Del.quantity cm3/: 204.0...208.0
1000H.: (201.0...211.0)
               cm3/ : 8.00
Dispersion
              1000H.: (12.0)
Charge press. hPa : -
              1/min : 500
Speed
Del.quantity cm3/: 129.0...131.0
1000H.: (126.0...134.0)
Dispersion cm3/: 8.00
              1000H.: (-)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.60
Speed
              1/min : 1095...1110
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 190.0...210.0
              1000H.: (186.0...214.0)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11.7 D2
Edition : 09.10.87
Superceeded : 18.9.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 835

Injection pump

Pump designation : PE6P12OA32ORS3183-1 EP type number : 0 411 826 758

Governor

Governor design.: RQ250/1000PA832 Governor no.: 0 421 801 368

Customer-spec. information
Customer : DAF

Engine : WS 259

1st version kW : 259.0 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                  : 3.70...3.80
                                                   4th speed 1/min: 1250
                   : (3.65...3.85)
                                                     C-rod trav.mm : 0.00...1.00
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4
                                                   LOWEST RATED SPEED I
                                                   Setting point w/out aux. spring
                                                   Speed 1/min: 250
                                                   Contr.-rod trav.mm: 6.8
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                   Testing:
                                                               1/min : 100
                                                   Speed
BASIC SETTING
                                                   C-rod trav.mm min: 8.30
                                                   Speed 1/min : 250
                                                   C-rod trav.mm : 6.60...7.00
C-rod trav.mm : 2.00
1st speed
             1/mi: 850
                                                               mm : 2.00
1/min : 350...390
Contr.-rod trav.mm: 12.10...12.20
                                                   Speed
Del.quantity cm3/: 20.0...20.2
                                                   TORQUE CONTROL
                                                   Torque-control curve - 1st version
                                                   1st speed 1/min: 850
              100H.: (19.7...20.5)
                                                     C-rod trav.mm : 12.10...12.20
             cm3/:0.5
                                                   2nd speed 1/min : 1000
Dispersion
                    -------------
                                                     C-rod trav.mm : 12.00...12.20
              100H.: (0.9)
                                                   Adjustment test, manifold-pressure
2nd speed 1/min: 250.0
Contr.-rod trav. m: 6.6...7.0
Del.quantity cm3/: 1.6...2.2
100H.: (1.3...2.5)
                                                    compensator (LDA, ADA, ALDA)
                                                   1st version
             cm3/: 0.8
100H.: (1.2)
Dispersion
                                                   Setting
                                                   Speed
                                                                1/min : 600
                                                   Pressure hPa : 1000
Contr.-rod trav.mm: 12.10...12.20
SLEEVE POSITION
Control-lever position
            Degree: -1
                                                   Measurement
             17min: 550
                                                               1/min : 600
                                                   Speed
Cont.-rod travelmm: 15.20...16.40
                                                   1st pressure hPa : -
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                   C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 430
                                                   C-rod trav.mm : 11.60...11.70
3rd pressure hPa : 280
1st version
Speed
             1/min: 850
C-rod trav.mm : 10.50...10.70
                                                   FUEL-DELIVERY CHARACTERISTICS
                                                   1st version
HIGHEST RATED SPEED
                                                   Charge press. hPa : -
                                                           1/min : 600
                                                   Speed
                                                   Del.quantity cm3/: 144.0...146.0
1st version
                                                                1000H.: (141.0...149.0)
Setting point:
       1/min : 550
Speed
Contr. - rod trav.mm: 15.8
                                                   ROTATIONAL-SPEED LIMITATION
Testing:
                                                   1st version
1st c-rod trav.mm : 11.10
                                                   1mm control-rod travel less than
  Speed 1/min: 1035...1050
2nd c-rod trav.mm : 4.00
                                                   full-load trav.mm: 11.10
  Speed 1/min: 1125...1155
                                                   Speed 1/min: 1035...1050
```

K03

STARTING FUEL DELIVERY

LOW IDLE

:

Remarks:

K94

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : DAF 11.7 E1 Edition : 09.10.87 Superceeded : 18.9.87 Calibrating oil : ISO-4113

Combination no. : 0 401 846 839

Injection pump

Pump designation : PE6P12OA32OR\$3183-1Y EP type number : 0 411 826 765

Governor

Governor design. : RQV250...1000PA851 Governer no. : 0 421 813 604

Customer-spec. information Customer

: WS 282 Engine

1st version kW : 282.0 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder : 1 688 901 019 assembly

Opening pressure, bar : 207...210

Perforated-plate diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00X1.50X1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80 HIGHEST RATED SPEED : (3.65...3.85) Contr.-rod trav.mm: 9.00...12.00 1st version Cam sequence : 1-5-3-6-2-4 Control-lever position degrees: 51...59 Testing: SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) 1st c-rod trav.mm : 12.10 1/min : 1040...1050 Speed 2nd c-rod trav.mm : 4.00 1/min: 1130...1160 BASIC SETTING Speed 4th speed 1/min: 1250 C-rod tray.mm : 0.00...1.00 1/mi: 850 1st speed Contr.-rod trav.mm: 13.10...13.20 LOWEST RATED SPEED I Control-lever Del.quantity cm3/ : 21.9...22.1 position degrees: 15...23 100H.: (21.6...22.4) Testing: Speed 1/min : 100 Dispersion cm3/:0.5C-rod trav.mm min : 8.30 Speed 1/min: 250 C-rod trav.mm 100H.: (0.9) : 6.60...7.00 2nd speed 1/min: 250.0 CONSTANT REGULATION Contr.-rod trav. m: 6.6...7.0 1/min : 275...385 Speed Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) Adjustment test, manifold-pressure cm3/: 0.8 100H.: (1.2) compensator (LDA, ADA, ALDA) Dispersion (B) Setting of injection pump with 1st version Setting externally-mounted governor Speed 1/min : 600 hPa : 1000 SLEEVE TRAVELS Pressure 1st speed 1/min: 250 Contr.-rod trav.mm: 13.10...13.20 Sleeve travel mm: 1.30...1.70 2nd speed 1/min: 400 Sleeve travel mm: 3.20...3.60 3rd speed 1/min: 800 Measurement Speed 1/min: 600 Sieeve travel mm: 5.80...6.20 4th speed 1/min: 1000 1st pressure hPa : -C-rod trav.mm : 10.10...10.30 2nd pressure hPa : 570 Sleeve travel mm: 7.90...8.10 C-rod trav.mm : 12.40...12.50 3rd pressure hPa : 310 SLEEVE POSITION C-rod trav.mm : 10.60...10.90 Control-lever position Degree: -1 1/min: 1040 SWITCH-OVER POINT Cont.-rod travelmm: 15.20...17.80 1/min : 200 (220) Speed FULL-LOAD DELIV, AT FULL-LOAD STOP FUEL-DELIVERY CHARACTERISTICS 1st version Speed 1/min: 850 Charge press, hPa: 1000
Del.quantity cm3/: 219.0...221.0
1000H.: (216.0...224.0)
Dispersion cm3/: 5.00 1st version Charge press. hPa : -1/min : 600 Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) 1000H.: (9.00)

K06

```
ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 12.10
Speed 1/min: 1040...1050

STARTING FUEL DELIVERY

Speed 1/min: 100
Del.quantity cm3/: 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min: 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm3/: 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/: 8.00
1000H.: (12.00)
```

:

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DAF 11.7 E2
Edition : 09.10.87
Superceeded : 13.5.87
Calibrating oil : ISO-4113

Combination no. : 0 401 846 840

Injection pump

Pump designation : PE6P12OA32ORS3183-1Z

EP type number : 0 411 826 760

Governor

Governor design. : RQV250...1000PA851-1 Governor no. : 0 421 813 605

30 Ver Her Ho. . . . 421 013 05.

Customer-spec. information Customer : DAF

Engine : W\$ 225

1st version kW : 225.0 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

x Length mm : 6.00X1.50X1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                    : 3.70...3.80
                                                        HIGHEST RATED SPEED
                    : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
                                                        1st version
Cam sequence : 1-5-3-6-2-4
                                                        Control-lever
                                                         position degrees: 50...58
                                                        Testina:
SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                                                        1st c-rod trav.mm : 10.30
                                                          Speed 1/min: 1040...1050
                                                        2nd c-rod trav.mm: 4.00
                                                          Speed 1/min: 1120...1150
th speed 1/min: 1250
C-rod trav.mm: 0.00...1.00
BASIC SETTING
                                                        4th speed
              1/mi: 850
1st speed
Contr.-rod trav.mm: 11.30...11.40
                                                        LOWEST RATED SPEED I
                                                        Control-lever
Del.quantity cm3/: 18.1...18.3
                                                         position degrees: 15...23
               100H.: (17.8...18.6)
                                                        Testing:
                                                                     1/min : 100
                                                        Speed
                                                        C-rod trav.mm min: 8.30
               cm3/:0.5
Dispersion
                                                        Speed 1/min: 250
               100H.: (0.9)
                                                        C-rod trav.mm : 6.60...7.00
2nd speed
               1/min: 250.0
                                                        CONSTANT REGULATION
Contr.-rod trav. m: 6.6...7.0
                                                        Speed
                                                                    1/min : 275...385
Del.quantity cm3/: 1.4...2.0
               100H.: (1.1..2.3)
cm3/: 0.8
100H.: (1.2)
                                                        Adjustment test, manifold-pressure
Dispersion
                                                         compensator (LDA,ADA,ALDA)
(B) Setting of injection pump with
                                                        1st version
    externally-mounted governor
                                                        Setting
                                                                     1/min : 600
                                                        Speed
SLEEVE TRAVELS
                                                                    hPa : 1000
                                                        Pressure
1st speed 1/min: 250
Sleeve travel mm: 1.30...1.70
2nd speed 1/min: 400
Sleeve travel mm: 3.20...3.60
3rd speed 1/min: 800
                                                        Contr.-rod trav.mm: 11.30...11.40
                                                        Measurement
                                                                    1/min : 600
                                                        Speed
  Sleeve travel mm: 5.80...6.20
                                                        1st pressure hPa : -
4th speed 1/min: 1000
                                                         C-rod trav.mm : 10.10...10.30
                                                        2nd pressure hPa : 330
  Sleeve travel mm: 7.90...8.10
                                                        C-rod trav.mm : 11.00...11.10
3rd pressure hPa : 260
SLEEVE POSITION
Control-lever position
                                                          C-rod trav.mm : 10.50...10.70
             Degree: -1
1/min: 1040
                                                        FUEL-DELIVERY CHARACTERISTICS
Cont.-rod travelmm: 15.20...17.80
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                        1st version
                                                        Charge press. hPa : -
                                                        Speed 1/min: 600
Del.quantity cm3/: 144.0...146.0
1st version
               1/min: 850
Speed
Charge press. hPa : 1000
                                                                     1000H.: (141.0...149.0)
Del.quantity cm3/: 181.0...183.0
1000H.: (178.0...186.0)
Dispersion cm3/: 5.00
                                                        ROTATIONAL-SPEED LIMITATION
             1000H.: (9.00)
                                                        1st version
K09
```

```
1mm control-rod travel less than
 full-load trav.mm: 10.30
Speed 1/min: 1040...1050
Speed
STARTING FUEL DELIVERY
Speed
                   1/min : 100
Del.quantity cm3/: 260.0...300.0
1000H.: (256.0...304.0)
LOW IDLE
Speed
                   1/min : 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm3/: 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/: 8.00
1000H.: (12.00)
Remarks:
                             :
```

Note inst. in remarks column

Test sheet Edition Superceeded : DAF 11.7 E3 : 09.10.87

Calibrating oil : ISO-4113

Combination no. : 0 401 846 841

Injection pump

Pump designation : PE6P12OA32ORS3183-1

EP type number : 0 411 826 758

Governor

Governor design. : RQV250...1000PA851-2 Governer no. : 0 421 813 606

Customer-spec. information Customer : DAF

Engine : WS 259

1st version kW : 259.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                     : 3.70...3.80
                                                          HIGHEST RATED SPEED
                      : (3.65...3.85)
Contr.-rod trav.mm: 9.00...12.00
                                                          1st version
Cam sequence : 1-5-3-6-2-4
                                                          Control-lever
                                                            position degrees: 51...59
                                                          Testing:
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                          1st c-rod trav.mm : 11.10
Speed 1/min : 1040...1050
2nd c-rod trav.mm : 4.00
BASIC SETTING
                                                                       1/min: 1120...1150
                                                             Speed
                                                           4th speed 1/min: 1250
1st speed
                1/mi: 850
                                                             C-rod trav.mm : 0.00...1.00
Contr.-rod trav.mm: 12.10...12.20
                                                          LOWEST RATED SPEED I
                                                          Control-lever
Del.quantity cm3/: 20.0...20.2
                                                           position degrees: 16...24
                100H.: (19.7...20.5)
                                                          Testino:
                                                                         1/min : 100
                                                          Speed
               cm3/:0.5
                                                          C-rod trav.mm min: 8.30
Dispersion
                                                          Speed 1/min : 250
               100H.: (0.9)
                                                          C-rod trav.mm : 6.60...7.00
2nd speed
               1/min: 250.0
                                                          CONSTANT REGULATION
Contr.-rod trav. m: 6.6...7.0
                                                                        1/min : 275...385
                                                          Speed
Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
                                                          Adjustment test, manifold-pressure
               cm3/: 0.8
100H.: (1.2)
Dispersion
                                                           compensator (LDA,ADA,ALDA)
(B) Setting of injection pump with externally-mounted governor
                                                          1st version
                                                          Setting
                                                                         1/min : 600
                                                          Speed
                                                                        hPa : 1000
SLEEVE TRAVELS
                                                          Pressure
1st speed 1/min: 250
Sleeve travel mm: 1.30...1.70
2nd speed 1/min: 400
Sleeve travel mm: 3.20...3.60
                                                          Contr.-rod trav.mm: 12.10...12.20
                                                          Measurement
                                                                        1/min : 600
                                                          Speed
3rd speed 1/min: 800
  Sleeve travel mm: 5.80...6.20
                                                          1st pressure hPa : -
4th speed 1/min: 1000
Sleeve travel mm: 7.90...8.10
                                                          C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 430
                                                          C-rod trav.mm : 11.60...11.70
3rd pressure hPa : 280
SLEEVE POSITION
Control-lever position
                                                             C-rod trav.mm : 10.50...10.70
              Degree: -1
               17min: 1040
                                                          SWITCH-OVER POINT
Cont.-rod travelmm: 15.20...17.80
                                                          Speed 1/min: 200 (0)
FULL-LOAD DELIV, AT FULL-LOAD STOP
                                                          FUEL-DELIVERY CHARACTERISTICS
1st version
Speed
               1/min: 850
Charge press. hPa: 1000
Del.quantity cm3/: 200.0...202.0
1000H.: (197.0...205.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                                                          1st version
                                                          Charge press. hPa : -
                                                                        1/min : 600
                                                          Speed
                                                          Del.quantity cm3/: 144.0...146.0
1000H.: (141.0...149.0)
```

```
ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.10
Speed 1/min: 1040...1050

STARTING FUEL DELIVERY

Speed 1/min: 100
Del.quantity cm3/: 260.0...300.0
1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min: 250
Contr.-rod trav.mm: 6.60...7.00
Del.quantity cm3/: 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/: 8.00
1000H.: (12.00)

Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column : DAF 11.7 D3 : 09.10.87 Test sheet Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 0 401 846 842 Injection pump Pump designation : PE6P12OA32ORS3183-1Z EP type number : 0 411 826 760 Governor Governor design. : RQ250/1000PA832-1 Governer no. : 0 421 801 387 Customer-spec. information Customer : DAF Engine : WS 225 1st version kW : 225.0 Speed 1/min: 2000 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder assembly : 1 688 901 019 Opening pressure, bar : 207...210 Perforated-plate diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

: 6.00X1.50X1000

START OF DELIVERY Test pressure, bar: 25...27

```
Prestroke mm
                     : 3.70...3.80
                                                        4th speed 1/min : 1250
                     : (3.65...3.85)
                                                          C-rod tray.mm : 0.00...1.00
Contr.-rod trav.mm: 9.00...12.00
                    : 1-5- 3- 6- 2- 4
                                                        LOWEST RATED SPEED I
Cam sequence
                                                        Setting point w/out aux. spring
                                                        Speed 1/min: 250
                                                        Contr.-rod trav.mm: 6.8
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                                                        Testing:
                                                        Speed
                                                                     1/min : 100
BASIC SETTING
                                                        C-rod trav.mm min: 8.30
                                                                    1/min : 250
                                                        Speed
                                                        C-rod trav.mm : 6.60...7.00
1st speed
                1/mi: 850
                                                                     nm : 2.00
1/min : 335...375
                                                        C-rod trav.mm
Contr.-rod trav.mm: 11.30...11.40
                                                        Speed
Del.quantity cm3/ : 18.1...18.3
                                                        TORQUE CONTROL
                                                        Torque-control curve - 1st version
               100H.: (17.8...18.6)
                                                        1st speed 1/min: 850
                                                          C-rod trav.mm : 11.50...11.60
                                                        2nd speed 1/min: 1000
C-rod trav.mm: 11.40...11.60
               cm3/:0.5
Dispersion
               100H.: (0.9)
                                                        Adjustment test, manifold-pressure
                                                         compensator (LDA, ADA, ALDA)
2nd speed
               1/min: 250.0
Contr.-rod trav. m: 6.6...7.0

Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.3)

Dispersion cm3/: 0.8

100H.: (1.2)
                                                        1st version
                                                       Setting
                                                                     1/min : 600
hPa : 1000
                                                        Speed
                                                       Pressure
SLEEVE POSITION
                                                       Contr.-rod trav.mm: 11.30...11.40
Control-lever position
              Degree: -1
                                                       Measurement
              17min: 550
                                                                     1/min : 600
                                                       Speed
Cont.-rod travelmm: 15.20...16.40
                                                       1st pressure hPa : -
                                                       C-rod trav.mm : 10.10...10.30
2nd pressure hPa : 330
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                       C-rod trav.mm : 11.00...11.10
3rd pressure hPa : 260
1st version
Speed
               1/min: 850
Charge press. hPa : 1000
                                                          C-rod trav.mm
                                                                            : 10.50...10.70
Del.quantity cm3/: 181.0...183.0
1000H.: (178.0...186.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                                                       FUEL-DELIVERY CHARACTERISTICS
                                                       1st version
HIGHEST RATED SPEED
                                                       Charge press. hPa : -
                                                                     1/min : 600
                                                       Del.quantity cm3/: 144.0...146.0
1st version
                                                                     1000H.; (141.0...149.0)
Setting point:
Speed 1/min: 550
Contr.-rod trav.mm: 15.8
                                                       ROTATIONAL-SPEED LIMITATION
Testing:
                                                       1st version
1st c-rod trav.mm : 10.30
                                                       1mm control-rod travel less than
  Speed 1/min: 1035...1050
                                                        full-load trav.mm: 10.30
2nd c-rod trav.mm : 4.00
            1/min : 1120...1150
                                                                    1/min : 1035...1050
                                                       Speed
  Speed
K15
```


BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ENA 11,9 C Edition : 18.09.87 Superceeded : -Calibrating oil : ISO-4113 Combination no. : 0 401 846 860 Injection pump Pump designation : PE6P12OA32ORS32OO EP type number : 0 411 826 766 Governor Governor design. : RQV250...1000PA808-1 Governer no. : 0 421 813 660 Customer-spec. information Customer : ENASA : 96 R1 BX Engine 1st version kW : 265.0 Speed 1/min: 2000 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. 96 : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder : 1 688 901 019 assembly Opening pressure, bar : 207...210 Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness : 6.00x1.50x1000 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

START OF DELIVERY
Test pressure, bar: 25...27

per values

```
Prestroke mm
                     : 3.80...3.90
                                                         Del.quantity cm3/: 256.0...258.0
                                                                       1000H.: (253.0...261.0)
cm3/ : 5.00
1000H.: (9.00)
                     : (3.75...3.95)
Contr.-rod trav.mm: 9.00...12.00
                                                         Dispersion
Cam sequence : 1- 5- 3- 6- 2- 4
                                                         HIGHEST RATED SPEED
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                         1st version
                                                         Control-lever
                                                          position degrees: 42...50
SD mark cyl. no. : 1
                                                         Testing:
                                                         1st c-rod trav.mm : 11.00
Speed 1/min : 1040...1050
BASIC SETTING
                                                         2nd c-rod trav.mm : 4.00
1st speed
              1/mi: 600
                                                         Speed 1/min: 1120...1150
4th speed 1/min: 1250
Contr.-rod trav.mm: 12.00...12.10
                                                            C-rod trav.mm : 0.00...1.00
Del.quantity cm3/: 25.6...25.8
                                                         LOWEST RATED SPEED I
               100H.: (25.3...26.1)
                                                         Control-lever
                                                          position degrees: 5...13
               cm3/:0.5
Dispersion
                                                         Testing:
               100H.: (0.9)
                                                                       1/min : 100
                                                         Speed
                                                         C-rod trav.mm min : 4.80
                                                         Speed 1/min: 250
2nd speed
               1/min: 250.0
Contr.-rod trav. m: 3.1...3.5
                                                         C-rod trav.mm : 3.10...3.50
Del.quantity cm3/: 1.7...2.3
100H.: (1.4...2.6)
Dispersion cm3/: 0.8
100H.: (1.2)
                                                         CONSTANT REGULATION
                                                         Speed 1/min : 250...330
                                                         Adjustment test, manifold-pressure
                                                          compensator (LDA, ADA, ALDA)
(B) Setting of injection pump with
    externally-mounted governor
SLEEVE TRAVELS
                                                         1st version
1st speed 1/min: 250
Sleeve travel mm: 1.00...1.40
2nd speed 1/min: 350
                                                         Setting
                                                                       1/min : 500
                                                         Speed
                                                         Pressure
                                                                       hPa : 1200
                                                         Contr.-rod trav.mm: 12.00...12.10
  Sleeve travel mm: 1.70...2.30
3rd speed 1/min: 700
Sleeve travel mm: 4.70...5.30
4th speed 1/min: 1045
Sleeve travel mm: 8.00...8.20
5th speed 1/min: 1135
Sleeve travel mm: 9.10...9.40
                                                         Measurement
                                                                      1/min : 500
                                                         Speed
                                                         1st pressure hPa
                                                         C-rod trav.mm : 8.50...8.90
2nd pressure hPa : 710
SLEEVE POSITION
                                                           C-rod trav.mm : 11.30...11.40
Control-lever position
                                                         3rd pressure hPa : 440
Degree: -1
Speed 1/min: 1090
Cont.-rod travelmm: 15.20...17.80
                                                           C-rod trav.mm
                                                                              : 9.50...9.70
                                                         FUEL-DELIVERY CHARACTERISTICS
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                         1st version
                                                         Charge press. hPa : 1200
1st version
Speed
               1/min: 600
                                                         Speed 1/min : 900
                                                         Del.quantity cm3/: 249.0...255.0
1000H.: (246.0...258.0)
Charge press. hPa : 1200
K18
```

```
Charge press. hPa : -
Speed 1/min: 500
Del.quantity cm3/: 151.0...153.0
1000H.: (148.0...156.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.00
Speed 1/min: 1040...1050
STARTING FUEL DELIVERY
                1/min : 100
Speed
Del.quantity cm3/: 230.0...260.0
1000H.: (226.0...264.0)
LOW IDLE
Speed 1/min: 250
Contr.-rod trav.mm: 3.10...3.50
Del.quantity cm3/: 17.0...23.0
1000H.: (14.0...26.0)
Dispersion cm3/: 8.00
1000H.: (12.00)
Remarks:
Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90
APPLICATION
Special-purpose vehicle
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                      Cam sequence
Note inst, in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : ENA 11.9 E
: 09.10.87
Test sheet
Edition
Superceeded
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 401 846 861
Combination no.
                                                      BASIC SETTING
Injection pump
                                                                     1/mi: 1030
                                                      1st speed
Pump designation : PE6P12OA32ORS3176-1
                                                      Contr.-rod trav.mm: 13.40...13.50
                    : 0 411 826 767
EP type number
Governor
Governor design. : RQV250...1050PA808
                                                     Del.quantity cm3/ : 24.8...25.0
                    : 0 421 813 553
Governer no.
                                                                    100H.: (24.5...25.3)
Customer-spec. information
                   : ENASA
                                                     Dispersion
                                                                    cm3/:0.5
Customer
                    : 96 R1 AX
                                                                    100H.: (0.9)
Engine
                                                     2nd speed 1/min: 250.0
Contr.-rod trav. m: 3.8...4.0
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                     Del.quantity cm3/ : 2.5...3.1
                    : 38...42
                                                                    100H.: (2.2...3.4)
                                                                    cm3/:0.8
                                                     Dispersion
                                                                    100H.: (1.2)
Overflow valve
                    : 1 417 413 025
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                     SLEEVE TRAVELS
                 : 1 688 901 019
                                                      1st speed 1/min: 250
 assembly
                                                        Sleeve travel mm: 1.00...1.40
                                                     2nd speed 1/min: 350
Opening
                                                     Sleeve travel mm: 1.70...2.30
3rd speed 1/min: 700
Sleeve travel mm: 4.50...5.10
                   : 207...210
 pressure, bar
Perforated-plate
                    : 0,8
                                                                   1/min: 1095
 diameter mm
                                                      4th speed
                                                        Sleeve travel mm: 8.20...8.40
                                                     5th speed 1/min: 1195
                                                        Sleeve travel mm: 9.40...9.80
Test inj. tubing
                   : 1 680 750 067
                                                     SLEEVE POSITION
Outside diameter
x Wall thickness
                                                     Control-lever position
                                                                  Degree: -1
1/min: 1110
                   : 6.00x1.50x1000
x Length mm
                                                     Speed
                                                     Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                     1st version
                                                                    1/min: 1030
START OF DELIVERY
                                                     Speed
                                                     Charge press. hPa : 900
Del.quantity cm3/ : 248.0...250.0
1000H.: (245.0...253.0)
Test pressure, bar: 25...27
                    : 3.80...3.90
Prestroke mm
                                                     Dispersion cm3/: 5.00
                    : (3.75...3.95)
Contr.-rod trav.mm: 9.00...12.00
                                                                   1000H.: (9.00)
K20
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 44...52
Testing:
1st c-rod trav.mm : 12.40
  Speed 1/min: 1090...1100
2nd c-rod trav.mm : 4.00
           1/min: 1180...1210
  Speed
            1/min : 1300
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 8...16
Testing:
Speed
             1/min : 100
C-rod trav.mm min : 5.50
Speed 1/min : 250
C-rod trav.mm : 3.80...4.00
CONSTANT REGULATION
            1/min : 250...350
Speed
Adjustment test, manifold-pressure
 compensator (LDA, ADA, ALDA)
1st version
Setting
Speed
             1/min : 500
Pressure
            hPa : 900
Contr.-rod trav.mm: 13.40...13.50
Measurement
Speed
            1/min : 500
ist pressure hPa
                   : 9.80...10.20
 C-rod trav.mm
                  : 550
2nd pressure hPa
 C-rod trav.mm
                  : 12.60...12.70
                  : 280
3rd pressure hPa
  C-rod trav.mm
                   : 10.90...11.10
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
Speed
            1/min : 650
Del.quantity cm3/: 247.0...253.0
            1000H.: (244.0...256.0)
Charge press. hPa : -
            1/min : 500
Speed
Del.quantity cm3/: 158.0...160.0
1000H.: (155.0...163.0)
```

```
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
Speed
STARTING FUEL DELIVERY
Speed
Del.quantity cm3/: 160.0...190.0
Remarks:
Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90
```

full-load trav.mm: 12.40

1/min: 1090...1100

1000H.: (156.0...194.0)

1/min : 100

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                             : 1-5-3-6-2-4
                                                        Cam sequence
Note inst. in remarks column
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                     : VOL 12.2 B : 16.10.87
Test sheet
Edition
Superceeded
                    : ISO-4113
Calibrating oil
                                                        SD mark cyl. no. : 1
                     : 0 401 846 864
Combination no.
                                                        BASIC SETTING
Injection pump
                                                                        1/mi: 700
                                                        1st speed
Pump designation : PE6P120A320RS3202
                                                        Contr.-rod trav.mm: 14.00...14.10
                     : 0 411 826 769
EP type number
Governor
Governor design.
                                                        Del.quantity cm3/: 25.1...25.3
                    : RQV300..1050PA657-22
                     : D 421 813 668
Governer no.
                                                                       100H.: (24.8...25.6)
Customer-spec. information
Customer
                    : VOLVO
                                                        Dispersion
                                                                       cm3/:0.5
Engine
                     : TD122K 442
                                                                       100H.: (0.9)
                                                        2nd speed 1/min: 300.0
Contr.-rod trav. m: 3.7...3.9
Del.quantity cm3/: 1.7...2.2
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                                       100H.: (1.4...2.4)
                     : 38...42
                                                                       cm3/: 0.5
100H.: (0.7)
                                                        Dispersion
Overflow valve
                     : 1 417 413 025
                                                        (B) Setting of injection pump with
                                                             externally-mounted governor
Inlet press., bar: 1.50
                                                        SLEEVE TRAVELS
Calibrating nozzle-holder
 assembly
                : 1 688 901 019
                                                        1st speed 1/min: 300
                                                        Sleeve travel mm: 1.50...1.90
2nd speed 1/min: 500
Sleeve travel mm: 4.00...4.60
Opening
                    : 207...210
 pressure, bar
                                                        3rd speed 1/min: 800
Perforated-plate
                                                          Sleeve travel mm: 6.30...6.70
 diameter mm
                     : 0,8
                                                        4th speed
                                                                      1/min: 1110
                                                          Sleeve travel mm: 7.80...8.00
                                                        5th speed 1/min: 1205
                                                          Sleeve travel mm: 8.70...9.10
                    : 1 680 750 067
Test inj. tubing
                                                        SLEEVE POSITION
Outside diameter
x Wall thickness
                                                        Control-lever position
                                                                     Degree: -1
1/min: 1150
                    : 6.00x1.50x1000
x Length mm
                                                        Speed
(A) Injection pump setting values
                                                        Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
Set constant delivery quant.
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                        1st version
                                                                      1/min: 700
START OF DELIVERY
                                                        Speed
                                                        Charge press. hPa : 900
Test pressure, bar: 25...27
                                                       Del.quantity cm3/: 251.0...253.0
1000H:: (248.0...256.0)
Dispersion cm3/: 5.00
1000H:: (9.00)
Prestroke mm
                    : 3.60...3.70
                    : (3.55...3.75)
Contr.-rod trav.mm: 9.00...12.00
K22
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 58...66
Testing:
1st c-rod trav.mm : 13.00
  Speed 1/min: 1105...1115
2nd c-rod trav.mm : 4.00
           1/min : 1190...1220
  Speed
            1/min: 1300
4th speed
  C-rod tray.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 5...13
Testing:
Speed
            1/min : 100
Speed 1/min: 5.30
Speed 1/min: 300
C-rod trav.mm : 3.70...3.90
CONSTANT REGULATION
            1/min : 300...390
Speed
Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
Pressure
            hPa : 900
Contr.-rod trav.mm: 14.00...14.10
Measurement
            1/min: 500
Speed
1st pressure hPa : -
 C-rod trav.mm
                   : 11.50...11.70
2nd pressure hPa : 740
                  : 13.80...13.90
 C-rod trav.mm
3rd pressure hPa
                  : 470
  C-rod trav.mm
                   : 11.80...12.00
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : -
           1/min : 700
Speed
Del.quantity cm3/: 203.0...205.0
            1000H.: (200.0...208.0)
ROTATIONAL-SPEED LIMITATION
```

```
1st version
1mm control-rod travel less than
 full-load trav.mm: 13.00
               1/min: 1105...1115
Speed
STARTING FUEL DELIVERY
Speed
               1/min : 100
Del.quantity cm3/: 240.0...280.0
1000H.: (236.0...284.0)
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
Speed 1/min: 300
Contr.-rod trav.mm: 3.70...3.90
Del.quantity cm3/: 17.0...22.0
1000H.: (14.5...24.5)
Dispersion cm3/: 5.00
1000H.: (7.00)
Remarks:
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
```

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Cam sequence
Note inst. in remarks column
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                     : VOL 12.2 B1 : 16.10.87
Test sheet
Edition
Superceeded
Calibrating oil
                    : ISO-4113
                                                        SD mark cyl. no. : 1
Combination no.
                     : 0 401 846 865
                                                        BASIC SETTING
Injection pump
                                                         1st speed
                                                                        1/mi: 700
Pump designation : PE6P12DA32ORS3202
                                                        Contr.-rod trav.mm: 11.90...12.00
EP type number
                    : 0 411 826 769
Governor
Governor design. : RQV300..1025PA657-23
                                                        Del.quantity cm3/ : 20.8...21.0
                    : 0 421 813 669
Governer no.
                                                                       100H.: (20.5...21.3)
Customer-spec. information
Customer
                    : VOLVO
                                                        Dispersion
                                                                       cm3/:0.5
Engine
                     : TD122A 35
                                                                       100H.: (0.9)
                                                        2nd speed 1/min: 300.0
Contr.-rod trav. m: 3.9...4.1
TEST BENCH REQUIREMENTS
                                                        Del.quantity cm3/: 2.1...2.6
100H.: (1.8...2.8)
Dispersion cm3/: 0.5
100H.: (0.7)
Calibrating-oil inlet temp. °C
                     : 38...42
Overflow valve
                     : 1 417 413 025
                                                         (B) Setting of injection pump with
                                                             externally-mounted governor
Inlet press., bar : 1.50
                                                        SLEEVE TRAVELS
Calibrating nozzle-holder
                                                        1st speed 1/min: 300
Sleeve travel mm: 1.50...1.90
2nd speed 1/min: 500
Sleeve travel mm: 4.20...4.80
            : 1 688 901 019
 assembly
Opening
 pressure, bar
                     : 207...210
                                                                      1/min: 800
                                                        3rd speed
Perforated-plate
                                                           Sleeve travel mm: 6.30...6.70
 diameter mm
                     : 0,8
                                                        4th speed 1/min: 1080
                                                          Sleeve travel mm: 8.30...8.50
                                                        5th speed 1/min: 1150
Sleeve travel mm: 9.50...9.90
Test inj. tubing
                    : 1 680 750 067
                                                        SLEEVE POSITION
Outside diameter
                                                        Control-lever position
x Wall thickness
                    : 6.00x1.50x1000
x Length mm
                                                                      Degree: -1
                                                                       17min: 1080
                                                        Speed
                                                        Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                        1st version
START OF DELIVERY
                                                        Speed
                                                                       1/min: 700
Test pressure, bar: 25...27
                                                        Charge press. hPa : 900
                                                        Del.quantity cm3/: 208.0...210.0
1000H.: (205.0...213.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
Prestroke mm
                     : 3.60...3.70
                     : (3.55...3.75)
Contr.-rod trav.mm: 9.00...12.00
K24
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 58...66
Testing:
1st c-rod trav.mm : 10.90
  Speed 1/min: 1080...1090
2nd c-rod trav.mm : 4.00
           1/min: 1140...1170
  Speed
             1/min : 1250
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 5...13
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 5.50
Speed 1/min : 300
C-rod trav.mm : 3.90...4.10
CONSTANT REGULATION
            1/min: 300...390
Speed
Adjustment test, manifold-pressure
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
            hPa : 900
Contr.-rod trav.mm: 11.90...12.00
Measurement
            1/min : 500
Speed
1st pressure hPa : -
                   : 11.50...11.70
 C-rod trav.mm
2nd pressure hPa : 450
                   : 11.70...11.80
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : -
            1/min : 700
Speed
Del.quantity cm3/: 203.0...205.0
1000H.: (200.0...208.0)
ROTATIONAL-SPEED LIMITATION
1st version
```

```
1mm control-rod travel less than

full-load trav.mm: 10.90
Speed 1/min: 1080...1090

STARTING FUEL DELIVERY

Speed 1/min: 100
Del.quantity cm3/: 240.0...280.0
1000H.: (236.0...284.0)
Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min: 300
Contr.-rod trav.mm: 3.90...4.10
```

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Prestroke am
                                                                       : 4.00...4.10
                                                                       : (3.95...4.15)
                                                    Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                                      : 8- 7- 2- 6- 3- 5-
4- 1
                                                    Cam sequence
Test sheet
                   : MB 14,6 A 3
                   : 18.09.87
Superceeded
                   : 5.85
Calibrating oil : ISO-4113
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Combination no.
                   : 0 401 848 756
                                                                         270-315
                                                    Tolerance + - 0
                                                                       : 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320L$3802-10
                                                    SD mark cyl. no. : 8
EP type number
                  : 0 411 818 710
                                                    BASIC SETTING
Governor
Governor design. : RQV300...1150PA486-3
                                                    1st speed 1/mi: 1150
Governer no.
                  : 0 421 813 411
Customer-spec. information
                                                    Contr.-rod trav.mm: 11.00...11.10
Customer
                   : DAIMLER-BENZ
                                                    Del.quantity cm3/: 11.3...11.5
                   : 0M422
Engine
                                                                  100H.: (11.0...11.7)
1st version kW : 184.0
Speed
             1/min: 2300
                                                    Dispersion
                                                                  cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                  100H.: (0.8)
                                                    2nd speed 1/min: 300.0
Contr.-rod trav. m: 8.4...8.6
Del.quantity cm3/: 1.4...2.0
Calibrating-oil inlet temp. °C
                   : 38 ... 42
                                                                  100H.: (1.1...2.2) cm3/: 0.4
Overflow valve
                   : 1 417 413 025
                                                    Dispersion
                                                                  100H.: (0.7)
Inlet press., bar : 1.50
                                                    (B) Setting of injection pump with
Overflow
                                                        externally-mounted governor
 quantity min. 1/h: 100...120
                                                    SLEEVE TRAVELS
Calibrating nozzle-holder
                                                    1st speed 1/min: 300
                  : 0 681 343 009
                                                      Sleeve travel mm: 1.60...1.80
 assembly
                                                    2nd speed 1/min: 800
                                                      Sleeve travel mm: 5.80...6.20
Opening
 pressure, bar : 172...175
                                                    3rd speed 1/min: 1200
                                                    Sleeve travel mm: 8.20...8.40
4th speed 1/min: 260
Sleeve travel mm: 9.60...10.40
Test inj. tubing : 1 680 750 015
Outside diameter
                                                    SLEEVE POSITION
x Wall thickness
                                                    Control-lever position
                   : 6.00x1.50x600
x Length mm
                                                                Degree: -1
                                                                 17min: 1230
                                                    Speed
                                                    Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                    1st version
START OF DELIVERY
                                                                 1/min: 1150
                                                    Speed
                                                    Del.quantity cm3/: 113.0...115.0
1000H.: (110.5...117.5)
Test pressure, bar: 25...27
```

```
Dispersion cm3/ : 4.00
            1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 50...58
Testing:
1st c-rod trav.mm : 10.00
  Speed 1/min: 1190...1200
2nd c-rod trav.mm : 4.00
            1/min: 1240...1270
  Speed
4th speed
            1/min : 1400
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 9.70
            1/min : 300
Speed
               : 8,00...8.20
C-rod trav.mm
                  : 2.00
C-rod trav.mm
           1/min : 410...480
Speed
TORQUE CONTROL
Dimension a mm : 0.20
Torque-control curve - 1st version
1st speed 1/min : 1150
  C-rod trav.mm : 11.00...11.10
2nd speed 1/min: 600
  C-rod trav.mm : 11.20...11.40
SWITCH-OVER POINT
Speed
           1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
1st version
            1/min : 600
Speed
Del.quantity cm3/ : 92.0...96.0
            1000H.: (89.0...99.0)
            cm3/:6.00
Dispersion
            1000H.: (9.00)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 10.00
Speed
          1/min : 1190...1200
```

STARTING FUEL DELIVERY

Remarks:

K27

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet : MB 14,7 D 1 Edition : 18.09.87 Superceeded :
Calibrating oil : ISO-4113
Combination no. : 0 401 848 782
injection pump
Pump designation : PE8P110A320L$3842
EP type number : 0 411 818 714
Governor
Governor design. : RQV300...950PA829-1K
Governer no. : 0 421 815 167
Customer-spec. information
Customer
                 : DAIMLER-BENZ
Engine
                  : 0M442
1st version kW : 206.0
Speed 1/min: 1900
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                  : 38...42
Overflow valve
                  : 1 417 413 025
Inlet press., bar : 1.50
Overflow.
 quantity min. 1/h: 100...120
Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
                : 6.00x1.50x600
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
   per values
```

START OF DELIVERY
Test pressure, bar: 25...27

Del.quantity cm3/: 133.0...135.0 1000H.: (130.5...137.5) Prestroke mm : 4.00...4.10 : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 cm3/ : 4.00 Dispersion : 8- 7- 2- 6- 3- 5-1000H.: (8.00) Cam sequence 4- 1 HIGHEST RATED SPEED 1st version SD ang. spacing CS: 0-45-90-135-180-225-Control-lever position degrees: 57...65 270-315 Tolerance + - 0 : 0.50 (0.75) Testing: 1st c-rod trav.mm : 12.50 Speed 1/min : 990...1000 SD mark cyl. no. : 8 BASIC SETTING 2nd c-rod trav.mm: 4.00 1/min: 1045...1075 1/mi: 950 4th speed 1/min: 1300 1st speed C-rod trav.mm : 0.00...1.50 Contr.-rod trav.mm: 13.50...13.60 LOWEST RATED SPEED I Del.quantity cm3/: 13.3...13.5 Control-lever position degrees: 14...22 100H.: (13.0...13.7) Testing: Dispersion cm3/:0.41/min : 100 Speed C-rod trav.mm min: 10.50 1/min : 300 100H.: (0.8) Speed C-rod trav.mm : 8.80...9.00 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.8...9.0 Del.quantity cm3/: 1.5...2.1 CONSTANT REGULATION 1/min : 300...450 Speed 100H.: (1.2...2.3) cm3/: 0.4 100H.: (0.7) Dispersion TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 950 (B) Setting of injection pump with C-rod trav.mm : 13.50...13.60 2nd speed 1/min: 600 externally-mounted governor C-rod trav.mm : 12.90...13.10 SLEEVE TRAVELS 3rd speed 1/min : 750 C-rod trav.mm : 13.20...13.40 1st speed 1/min: 300 Sleeve travel mm: 1.10...1.30 2nd speed 1/min: 500 Sleeve travel mm: 3.20...3.40 3rd speed 1/min: 800 Sleeve travel mm: 5.90...6.10 SWITCH-OVER POINT Speed 1/min : 220 (240) 4th speed 1/min: 1000 FUEL-DELIVERY CHARACTERISTICS Sleeve travel mm: 8.00...8.40 5th speed 1/min: 1050 Sleeve travel mm: 9.50...10.00 1st version 1/min : 600 Speed Del.quantity cm3/: 118.0...121.0 1000H.: (115.0...124.0) Dispersion cm3/: 6.00 1000H.: (9.00) Speed 1/min: 750 SLEEVE POSITION Control-lever position Degree: -1 17min: 975 Speed Cont.-rod travelmm: 15.20...17.80 Del.quantity cm3/: 124.0...128.0 1000H.: (121.0...131.0) Dispersion cm3/: 6.00 1000H.: (9.00) FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 950 Speed

ROTATIONAL-SPEED LIMITATION

1st version

1mm control-rod travel less than

full-load trav.mm: 12.50 Speed 1/min: 990...1000

STARTING FUEL DELIVERY

:

Remarks:

Note inst. in remarks column

Test sheet Edition Superceeded : MB 14,7 C 4 : 09.10.87

Calibrating oil : ISO-4113

: 0 401 848 789 Combination no.

Injection pump

Pump designation : PE8P110A320LS3842-1 EP type number : 0 411 818 716

Governor

Governor design. : RQ300/1050PA827-3K Governer no. : 0 421 803 095

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M442 Engine

1st version kW : 213.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

```
Prestroke mm
                                                         Del.quantity cm3/: 132.0...134.0
                     : 4.00...4.10
                                                                      1000H.: (129.5...136.5)
cm3/: 4.00
                     : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
                                                         Dispersion
Cam sequence : 8- 7- 2- 6- 3- 5-
                                                                       1000H.: (8.00)
                       4- 1
                                                         HIGHEST RATED SPEED
                                                         1st version
SD ang. spacing CS: 0-45-90-135-180-225-
                                                         Control-lever
                       270-315
                                                          position degrees: 40...48
Tolerance + - \circ : 0.50 (0.75)
                                                         Setting point:
                                                         Speed 1/min : 600
SD mark cyl. no. : 8
                                                         Contr.-rod trav.mm: 15.2
BASIC SETTING
                                                         Testing:
1st speed
             1/mi: 1050
                                                         1st c-rod trav.mm : 11.90
                                                           Speed 1/min: 1095...1110
Contr.-rod trav.mm: 12.90...13.00
                                                         2nd c-rod trav.mm : 4.00
                                                           Speed 1/min: 1150...1180
Del.quantity cm3/ : 13.2...13.4
                                                         4th speed 1/min: 1300
                                                           C-rod trav.mm : 0.00...1.50
               100H.: (12.9...13.6)
                                                        LOWEST RATED SPEED I
               cm3/: 0.4
                                                         Setting point w/out aux. spring
Dispersion
                                                         Speed 1/min : 300
               100H.: (0.8)
                                                         Contr.-rod trav.mm: 8.9
2nd speed 1/min: 300.0

Contr.-rod trav. m: 8.8...9.0

Del.quantity cm3/: 1.5...2.1

100H.: (1.2...2.3)

Dispersion cm3/: 0.4
                                                         Testing:
                                                                      1/min : 200
                                                         Speed
                                                        C-rod trav.mm min: 10.50
Speed 1/min: 300
                                                        C-rod trav.mm : 8.80...9.00
C-rod trav.mm : 2.00
               100H.: (0.7)
                                                        Speed 1/min: 450...490
                                                                     1/min : 550
(B) Setting of injection pump with
                                                         Speed
    externally-mounted governor
                                                         C-rod trav.mm max: 1.80
SLEEVE TRAVELS
                                                         TORQUE CONTROL
1st speed 1/min: 300
                                                         Torque-control curve - 1st version
  Sleeve travel mm: 1.30...1.50
                                                         1st speed 1/min: 1050
                                                           C-rod trav.mm : 12.90...13.00
2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70 3rd speed 1/min: 900
                                                        2nd speed 1/min: 600
                                                        C-rod trav.mm : 12.50...13.00
3rd speed 1/min : 750
Sleeve travel mm: 6.90...7.20
4th speed 1/min: 1050
Sleeve travel mm: 7.60...7.90
5th speed 1/min: 1100
                                                           C-rod trav.mm : 13.20...13.40
                                                        FUEL-DELIVERY CHARACTERISTICS
  Sleeve travel mm: 10.10...10.60
SLEEVE POSITION
                                                        1st version
Control-lever position
                                                                      1/min : 600
                                                        Speed
                                                        Del.quantity cm3/: 119.0...122.0
1000H.: (116.0...125.0)
Dispersion cm3/: 8.00
1000H.: (11.)
Speed 1/min: 900
             Degree: -2
1/min: 600
Speed
Cont.-rod travelmm: 14.70...15.70
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                        Del.quantity cm3/: 130.0...134.0
1000H.: (127.0...137.0)
1st version
                                                        Dispersion cm3/: 8.00
             1/min: 1050
Speed
L04
```

ROTATIONAL-SPEED LIMITATION

1st version 1mm control-rod travel less than

full-load trav.mm: 11.90 Speed 1/min: 1095...1110 Speed

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

Remarks:

LOS

Note inst. in remarks column

Test sheet : MB 18,3 D 1
Edition : 18.09.87
Superceeded : 13.5.87
Calibrating oil : ISO-4113

Combination no. : 0 401 849 709

Injection pump

Pump designation : PE10P110A320LS3818-1

EP type number : 0 411 819 703

Governor design. : RQV350...1150PA678 Governer no. : 0 421 813 402

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : 0M 423

1st version k₩ : 261.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 130...150

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY
Test pressure, bar: 25...27

```
Prestroke mm
                    : 4.00...4.10
: (3.95...4.15)
                                                         C-rod trav.mm : 0.00...1.00
Contr.-rod trav.mm: 9.00...12.00
                                                       LOWEST RATED SPEED I
Cam sequence : 10- 9- 4- 1- 8- 7
                                                       Control-lever
                       - 6- 3-
                                                        position degrees: 10...18
                                                       Testing:
                                                       Speed
                                                                     1/min : 100
SD ang. spacing CS: 0-45-72-117-144-189-
                                                       C-rod trav.mm min : 10.00
                      216-261-288-333
                                                                     1/min : 350
                                                       Speed
Tolerance + - 0
                    : 0.50 (0.75)
                                                       C-rod trav.mm
                                                                            : 8.00...8.50
SD mark cyl. no. : 10
                                                       CONSTANT REGULATION
                                                                     1/min: 350...500
                                                       Speed
BASIC SETTING
                                                       TORQUE CONTROL
1st speed
                1/mi: 1150
                                                       Torque-control curve - 1st version
                                                       1st speed
                                                                    1/min : 1150
Contr.-rod trav.mm: 11.80...11.90
                                                          C-rod trav.mm : 11.80...11.90
                                                       2nd speed 1/min: 600
Del.quantity cm3/: 12.6...12.8
                                                         C-rod trav.mm : 12.50...12.70
                                                       3rd speed 1/min : 900
               100H.: (12.3...13.0)
                                                         C-rod tray.mm : 12.30...12.50
Dispersion
               cm3/:0.4
                                                       SWITCH-OVER POINT
                                                       Speed
               100H.: (0.8)
                                                                   1/min : 270 (290)
                                                       FUEL-DELIVERY CHARACTERISTICS
               1/min: 350.0
2nd speed
Contr.-rod trav. m: 8.0...8.5
Del.quantity cm3/: 1.4...2.2
100H.: (1.1...2.4)
                                                       1st version
Dispersion
               cm3/:0.4
                                                                     1/min : 600
                                                       Speed
                                                       Del.quantity cm3/: 116.0...120.0
               100H.: (0.7)
                                                                     1000H.: (113.0...123.0)
SLEEVE POSITION
                                                       Dispersion
                                                                     cm3/:6.00
                                                       1000H.: (9.00)

Speed 1/min: 900

Del.quantity cm3/: 122.0...127.0

1000H.: (119.0...130.0)
              1/min: 1200
Speed
Cont.-rod travelmm: 15.20...17.80
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                                     cm3/: 6.00
1000H.: (9.00)
                                                       Dispersion
1st version
                                                                     1/min : 1150
               1/min: 1150
Speed
                                                       Speed
Del.quantity cm3/: 126.0...128.0
1000H.: (123.5...130.5)
Dispersion cm3/: 4.00
1000H.: (8.00)
                                                       Del.quantity cm3/: 92.0...94.0 * 1000H.: (89.0...97.0) Dispersion cm3/: 6.00 1000H.: (9.00)
HIGHEST RATED SPEED
                                                       ROTATIONAL-SPEED LIMITATION
1st version
Control-lever
                                                       1st version
                                                       1mm control-rod travel less than
 position degrees: 60...68
Testing:
                                                        full-load trav.mm: 10.80
1st c-rod trav.mm : 10.80
                                                       Speed
                                                                    1/min : 1190...1200
            1/min : 1190...1200
  Speed
2nd c-rod trav.mm : 4.00
                                                       STARTING FUEL DELIVERY
            1/min : 1240...1270
  Speed
             1/min : 1400
4th speed
```

Speed 1/min: 100 Del.quantity cm3/: 150.0...170.0 1000H.: (146.0...174.0)

Remarks:

* = Set at reduced-delivery stop.

```
: 4.00...4.10
: (3.95...4.15)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Prestroke mm
                                                     Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                     Cam sequence : 10- 9- 4- 1- 8- 7- 6- 3- 5- 2
Test sheet
                   : MB 18,3 K
                   : 09.10.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                     SD ang. spacing CS: 0-45-72-117-144-189-
                   : 0 401 849 737
                                                                           216-261-288-333
Combination no.
                                                     Tolerance + - 0
                                                                         : 0.50 (0.75)
Injection pump
Pump designation : PE10P110A320LS3844
                                                     SD mark cyl. no. : 10
EP type number
                   : 0 411 819 710
                                                     BASIC SETTING
Governor
Governor design. : RQ300/1050PA827-5K
Governer no.
                                                     1st speed 1/mi: 1050
                   : 0 421 803 097
                                                     Contr.-rod trav.mm: 12.90...13.00
Customer-spec. information
                   : DAIMLER-BENZ
Customer
                                                     Del.quantity cm3/: 13.3...13.5
Engine
                   : OM 443
                                                                    100H.: (13.0...13.7)
1st version kW : 265.0
Speed
             1/min: 2100
                                                     Dispersion
                                                                   cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.8)
                                                     2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/: 1.5...2.1
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                   100H.: (1.2...2.3)
cm3/: 0.4_
Overflow valve
                    : 1 417 413 025
                                                     Dispersion
                                                                    100H.: (0.7)
Inlet press., bar : 1.50
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Overflow
 quantity min. 1/h: 130...150
                                                     SLEEVE TRAVELS
Calibrating nozzle-holder
                                                     1st speed 1/min: 300
             : 0 681 343 009
                                                       Sleeve travel mm: 1.60...1.80
 assembly
                                                     2nd speed 1/min: 500
Sleeve travel mm: 5.50...5.70
3rd speed 1/min: 900
Sleeve travel mm: 7.00...7.30
Opening
 pressure, bar : 172...175
                                                     4th speed 1/min: 1050
Sleeve travel mm: 7.60...7.90
Test inj. tubing : 1 680 750 015
                                                     5th speed 1/min: 1100
                                                       Sleeve travel mm: 9.50...10.00
Outside diameter
x Wall thickness
                   : 6.00x1.50x600
                                                     SLEEVE POSITION
x Length mm
                                                     Control-lever position
(A) Injection pump setting values
                                                                  Degree: -2
                                                                   17min: 600
    Insp. values in parentheses
                                                     Speed
    Set constant delivery quant.
                                                     Cont.-rod travelmm: 14.70...15.70
    per values
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
Test pressure, bar: 25...27
                                                     ist version
                                                                   1/min: 1050
                                                     Speed
L09
```

Del.quantity cm3/: 133.0...135.0 1000H.: (130.5...137.5) Dispersion cm3/: 4.00 Dispersion 1000H.: (8.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 32...40 Setting point: Speed 1/min: 600 Contr.-rod trav.mm: 14.8 Testing: 1st c-rod trav.mm : 11.90 Speed 1/min: 1095...1110 2nd c-rod trav.mm : 4.00 1/min : 1160...1190 1/min : 1300 Speed 4th speed C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Setting point w/out aux, spring Speed 1/min : 300 Contr.-rod trav.mm: 8.0 Testing: Speed 1/min : 200 C-rod trav.mm min: 9.30 Speed 1/min : 300 : 7.90...8.10 C-rod trav.mm C-rod trav.mm : 2.00 1/min : 390...430 1/min : 550 Speed Speed C-rod trav.mm max: 1.80 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1050 C-rod trav.mm : 12.90...13.00 2nd speed 1/min: 600 C-rod trav.mm : 12.80...13.00 3rd speed 1/min: 900 C-rod trav.mm : 13.20...13.40 FUEL-DELIVERY CHARACTERISTICS 1st version 1/min : 600 Speed Del.quantity cm3/: 119.0...122.0 1000H.: (116.0...125.0) cm3/: 6.00 1000H.: (9.00) Dispersion 1/min : 900 Speed pel.quantity cm3/: 127.0...131.0 1000H.: (124.0...134.0)

Dispersion cm3/: 6.00 1000H.: (9.00)

ROTATIONAL-SPEED LIMITATION

1st version
1mm control-rod travel less than

full-load trav.mm: 11.90 Speed 1/min: 1095...1110

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

:

Remarks:

Note inst. in remarks column

Test sheet Edition Superceeded : MB 11,0 Q 7 : 09.10.87 Superceeded : 21.8.87 Calibrating oil : ISO-4113

Combination no. : 0 401 876 753

Injection pump

: PE6P120A320LS3815-10 Pump designation

EP type number : 0 411 826 735

Governor

: RSV750...1150P1A820-Governor design.

Governer no. : 0 421 833 227

Customer-spec. information Customer : DAIMLER-BENZ

: 0M421A

Engine 1st version kW : 184.0

Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. ^DC

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

: 1 688 901 019 assembly `

Opening

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

```
1/min : 1210...1220
                                                          Speed
START OF DELIVERY
                                                        2nd c-rod trav.mm : 4.00
                                                                    1/min : 1240...1260
1/min : 1350
Test pressure, bar: 25...27
                                                          Speed
                                                        4th speed
                     : 4.00...4.10
                                                          C-rod trav.mm : 0.30...1.40
Prestroke mm
                     : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
                                                        LOWEST RATED SPEED I
Cam sequence : 6- 3- 5- 2- 4- 1
                                                        Control-lever
                                                         position degrees: 32...40
                                                        Setting point w/out aux. spring
                                                        Speed 1/min: 750
Contr.-rod trav.mm: 3.4
Speed 1/min: 750
C-rod &rav.mm : 3.30...3.50
SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
                                                                  v.mm : 2.00
1/min : 755...815
SD mark cyl. no. : 6
                                                        C-rod trav.mm
                                                        Speed
BASIC SETTING
                                                        SET IDLE AUXILIARY SPRING
1st speed 1/mi: 1180
                                                        Contr.-rod trav.mm: 2.00
Contr.-rod trav.mm: 10.70...10.80
                                                        TORQUE CONTROL
                                                        Torque-control curve - 1st version
                                                                     1/min : 1180
Del.quantity cm3/ : 15.7...15.9
                                                        1st speed
                                                          C-rod trav.mm : 10.70...10.80
               100H.: (15.4...16.2)
                                                                     1/min : 950
                                                        2nd speed
                                                          C-rod trav.mm : 11.20...11.40
                                                        3rd speed 1/min : 1075
Dispersion
               cm3/:0.5
                                                          C-rod trav.mm : 11.00...11.20
               100H.: (0.9)
                                                        FUEL-DELIVERY CHARACTERISTICS
2nd speed
               1/min: 750.0
Contr.-rod trav. m: 3.4...3.6
Del.quantity cm3/: 1.8...2.4
                                                        1st version
               100H.: (1.5...2.7)
cm3/: 0.8
100H.: (1.2)
                                                        Speed 1/min: 975
Del.quantity cm3/: 168.0...172.0
1000H.: (165.0...175.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
Dispersion
SLEEVE POSITION
Control-lever position
             Degree: -3
               1/min: 800
Speed
                                                        ROTATIONAL-SPEED LIMITATION
Cont.-rod travelmm: 0.30...0.70
                                                        1st version
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                        1mm control-rod travel less than
                                                        full-load trav.mm: 9.70
1st version
                                                                    1/min : 1210...1220
Speed
               1/min: 1180
                                                        Speed
Del.quantity cm3/: 157.0...159.0
1000H.: (154.0...162.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                                                        STARTING FUEL DELIVERY
                                                        Speed
                                                                    1/min : 100
                                                        Del.quantity cm3/: 150.0...170.0
HIGHEST RATED SPEED
                                                                      1000H.: (146.0...174.0)
1st version
Control-lever
                                                        Remarks:
position degrees: 56...64
Testing:
1st c-rod trav.mm : 9.70
```

When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min. L13

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 4.00...4.10
                                                    Prestroke mm
                                                                        : (3.95...4.15)
                                                    Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                    Cam sequence : 6- 3- 5- 2- 4- 1
Test sheet
                   : MB 11,0 K 2
Edition
                   : 26.06.87
Superceeded
                                                    SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 876 758
                                                    SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3814-10
                                                    BASIC SETTING
EP type number : 0 411 816 741
                                                                  1/mi: 700
Governor
                                                    1st speed
Governor design. : RSV350..750P0A531
Governer no. : 9 421 833 269
                                                    Contr.-rod trav.mm: 13.20...13.30
Customer-spec. information
                                                    Del.quantity cm3/: 13.9...14.1
Customer
                   : DAIMLER-BENZ
                                                                  100H.: (13.6...14.3)
Engine
                   : 0M421
                                                    Dispersion
                                                                  cm3/:0.4
1st version kW : 116.0
Speed
              1/min: 1500
                                                                  100H.: (0.8)
                                                    2nd speed 1/min: 350.0
Contr.-rod trav. m: 8.2...8.4
Del.quantity cm3/: 1.3...1.9
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                                  100H.: (1.0...2.1)
cm3/: 0.4
                   : 38...42
                                                    Dispersion
                                                                  100H.: (0.7)
Overflow valve
                   : 1 417 413 025
                                                    SLEEVE POSITION
Inlet press., bar : 1.50
                                                    Control-lever position
                                                                Degree: 3
                                                                  17min: 800
Overflow.
                                                    Speed
 quantity min. 1/h: 100...120
                                                    Cont.-rod travelmm: 0.30...1.00
Calibrating nozzle-holder
                                                    Governor-spring reload
 assembly
            : 0 681 343 009
                                                    Notch setting x : 2.00
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                    1st version
                                                    Speed
                                                                  1/min: 700
                                                    Del.quantity cm3/: 139.0...141.0
Test inj. tubing : 1 680 750 015
                                                                 1000H.: (136.5...143.5)
cm3/ : 4.00
1000H.: (8.00)
Outside diameter
                                                    Dispersion
x Wall thickness
                  : 6,00x1,50x600
x Length mm
                                                    HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    1st version
                                                    Control-lever
                                                     position degrees: 22...30
    per values
START OF DELIVERY
                                                    Testing:
Test pressure, bar: 25...27
                                                    1st c-rod trav.mm : 12.10
                                                      Speed 1/min: 750...755
L14
```

```
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...793
LOWEST RATED SPEED I
Control-lever
 position degrees: 10...18
Setting point w/out aux. spring
               1/min : 350
Contr.-rod trav.mm: 8.3
Speed 1/min: 350
C-rod trav.mm : 8.20...8.40
SET IDLE AUXILIARY SPRING
Speed
                1/min : 2.00
STARTING FUEL DELIVERY
Speed 1/min: 100
Del.quantity cm3/: 130.0...150.0
1000H.: (126.0...154.0)
Remarks:
                           ;
Before adjusting the full-load delivery, set control rod to 14.5... 15.0 mm travel with full-load adjusting
screw in governor cover. Full-load adjustment with adjusting screw on
governor housing.
Observe VDT-I-420/120
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 4.00...4.10
                                                      Prestroke mm
                                                                          : (3.95...4.15)
Note inst. in remarks column
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 6- 3- 5- 2-
                                                                                            4- 1
                    : MB 11,0 K 4
: 18.09.87
Test sheet
Edition
Superceeded
                                                      SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
                   : 0 401 876 758
Combination no.
                                                       SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320L$3814-11
                                                      BASIC SETTING
EP type number : 0 411 816 756
                                                                    1/mi: 700
Governor
                                                       1st speed
Governor design. : RSV350..750P0A531
                                                      Contr.-rod trav.mm: 13.20...13.30
Governer no.
                   : 0 421 833 269
Customer-spec. information
                                                      Del.quantity cm3/: 13.9...14.1
Customer
                   : DAIMLER-BENZ
                                                                     100H.: (13.6...14.3)
Engine
                    : 0M421
                                                      Dispersion
                                                                     cm3/:0.4
1st version kW : 116.0
              1/min: 1500
Speed
                                                                     100H.: (0.8)
                                                      2nd speed 1/min: 350.0
Contr.-rod trav. m: 8.2...8.4
Del.quantity cm3/: 1.3...1.9
100H.: (1.0...2.1)
Dispersion cm3/: 0.4
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                     100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
                                                      Control-lever position
Inlet press., bar : 1.50
                                                                   Degree: 3
Overflow
                                                                    17min: 800
                                                      Speed
 quantity min. 1/h: 100...120
                                                      Cont.-rod travelmm: 0.30...1.00
Calibrating nozzle-holder
                                                      Governor-spring reload
              : 0 681 343 009
 assembly
                                                      Notch setting x : 2.00
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                      1st version
                                                      Speed
                                                                     1/min: 700
                                                      Del.quantity cm3/: 139.0...141.0
1000H.: (136.5...143.5)
Dispersion cm3/: 4.00
Test inj. tubing : 1 680 750 015
Outside diameter
                                                                    1000H.: (8.00)
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      1st version
                                                      Control-lever
    per values
                                                       position degrees: 22...30
START OF DELIVERY
                                                      Testing:
Test pressure, bar: 25...27
                                                      1st c-rod trav.mm : 12.10
                                                        Speed 1/min: 750...755
L16
```

2nd c-rod trav.mm : 4.00 Speed 1/min : 780...793 LOWEST RATED SPEED I Control-lever position degrees: 10...18 Setting point w/out aux. spring Speed 1/min : 350

Contr.-rod trav.mm: 8.3 Speed 1/min: 350 C-rod trav.mm: 8.20...8.40

SET IDLE AUXILIARY SPRING 1/min : 2.00 Speed

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 130.0...150.0 1000H.: (126.0...154.0)

Remarks:

Before adjusting the full-load delivery, set control rod to 14.5...
15.0 mm travel with full-load adjusting screw in governor cover. Full-load adjustment with adjusting screw on governor housing. Observe VDT-I-420/120

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Prestroke mm : 4.00...4.10 : (3.95...4.15)
Note inst. in remarks column
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 6-3-5-2-4-1
Test sheet
                    : MB 11,0 K 3
Edition
                    : 19.10.87
Superceeded
Calibrating oil : ISO-4113
                                                      SD ang. spacing ^{0}CS: 0-45-120-165-240-285 Tolerance + - ^{0}: 0.50 (0.75)
Combination no.
                    : 0 401 876 759
Injection pump
                                                      SD mark cyl. no. : 6
Pump designation : PE6P110A320LS3814-10
EP type number
                    : 0 411 816 741
                                                      BASIC SETTING
Governor
                    : RSV350...1050POA531-
                                                                     1/mi: 1030
Governor design.
                                                      1st speed
Governer no. : 0 421 833 271
                                                      Contr.-rod trav.mm: 12.20...12.30
Customer-spec. information
                                                      Del.quantity cm3/: 13.0...13.2
Customer
                   : DAIMLER-BENZ
                                                                    100H.: (12.7...13.4)
Engine
                    : 0M421
                                                      Dispersion
                                                                    cm3/:0.4
1st version kW : 148.0
              1/min: 2100
                                                                    100H.: (0.8)
Speed
                                                                    1/min: 350.0
TEST BENCH REQUIREMENTS
                                                      2nd speed
                                                      Contr.-rod trav. m: 8.2...8.4
                                                     Del.quantity cm3/: 1.3...1.9
Calibrating-oil inlet temp. OC
                                                                    100H.: (1.0...2.1)
cm3/: 0.4
                    : 38...42
                                                      Dispersion
                                                                    100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
                                                      Control-lever position
Inlet press., bar: 1.50
                                                                   Degree: -3
                                                                    17min: 800
Overflow
 quantity min. 1/h: 100...120
                                                      Cont.-rod travelmm: 0.30...1.00
                                                      Governor-spring reload
Calibrating nozzle-holder
             : 0 681 343 009
 assembly
                                                      Notch setting x : 3.25
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                      1st version
                                                     Speed 1/min: 1030

Del.quantity cm3/: 130.0...132.0

1000H.: (127.5...134.5)

Dispersion cm3/: 4.00
Test inj. tubing : 1 680 750 015
Outside diameter
                                                                   1000H.: (8.00)
x Wall thickness
                  : 6.00x1.50x600
x Length mm
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values 
Insp. values in parentheses 
Set constant delivery quant.
                                                      ist version
                                                      Control-lever
    per values
                                                      position degrees: 36...44
START OF DELIVERY
                                                      Testing:
Test pressure, bar: 25...27
                                                      1st c-rod trav.mm : 11.10
L18
```

```
Speed
             1/min : 1065...1075
2nd c-rod trav.mm : 4.00
             1/min: 1130...1150
  Speed
              1/min : 1350
4th speed
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 14...22
             17min : 350
                    : 8.20 ... 8.40
C-rod trav.mm
SET IDLE AUXILIARY SPRING
             1/min : 2.00
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Speed
             1/min : 600
Del.quantity cm3/: 112.0...116.0
              1000H.: (109.0...119.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.10
             1/min : 1065...1075
Speed
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 130.0...150.0
1000H.: (126.0...154.0)
Remarks:
Before adjusting the full-load
delivery set control rod to 14.5...
15.0 mm travel with full-load adjusting
screw in governor cover. Full-load adjustment with adjusting screw on
governor housing. Observe VDT-I-420/120
0
```

BOSCH INJ. PUMP TEST SPECIFICATIONS : 3.50...3.60 Prestroke mm : (3.45...3.65) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 5- 4-: MAN 10.0 A : 18.09.87 Test sheet Edition Superceeded SD ang. spacing CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 402 035 020 SD mark cyl. no. : 1 Injection pump Pump designation : PES5P120A720/3LS512 BASIC SETTING EP type number : 0 412 025 021 Governor 1st speed 1/mi: 750 Governor design. : R@300/1100PA813-1 Contr.-rod trav.mm: 10.70...10.80 Governer no. : 0 421 801 405 Customer-spec. information Del.quantity cm3/: 20.9...21.1 Customer : MAN 100H.: (20.6...21.4) Engine : D2865LF/260 cm3/: 9.5Dispersion 1st version kW : 191.0 1/min: 2200 100H.: (0.9) Speed 2nd speed 1/min: 300.0 Contr.-rod trav. m: 5.2...5.4 Del.quantity cm3/: 1.2...1.8 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C 100H.: (0.9...2.1) cm3/: 0.8 : 38...42 Dispersion 190H.: (1.2) Overflow valve : 1 417 413 025 SLEEVE POSITION Inlet press., bar : 1.50 Control-lever position Degree: -2 1/min: 600 Calibrating nozzle-holder Speed assembly : 1 688 901 019 Cont.-rod travelmm: 19.20...20.80 FULL-LOAD DELIV. AT FULL-LOAD STOP Opening : 207...210 pressure, bar 1st version 1/min: 750 Perforated-plate Speed Charge press. hPa : 1000 Del.quantity cm3/ : 209.0...211.0 diameter mm : 0,8 1000H: (206.0...214.0) cm3/: 5.00 1000H: (9.00) Test inj. tubing : 1 680 750 067 Dispersion Outside diameter x Wali thickness HIGHEST RATED SPEED : 6.00x1.50x1000 x Length mm 1st version (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Setting point: 1/min : 600 per values Contr.-rod trav.mm: 20.0 START OF DELIVERY Testing: 1st c-rod trav.mm : 9.00 Test pressure, bar: 30...32 Speed 1/min: 1145...1160

2nd c-rod tray.mm : 4.00 1/min: 1180...1210 Speed 1/min : 1350 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 300 Contra-rod trav.mm: 5.3 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.80 1/min : 300 Speed : 5.20...5.40 C-rod trav.mm TORQUE CONTROL : 0.30 Dimension a mm Torque-control curve - 1st version 1st speed 1/min: 750 C-rod trav.mm : 10.70...10.80 2nd speed 1/min : 1100 C-rod trav.mm : 10.00...10.10 3rd speed 1/min: 920 C-rod trav.mm : 10.40...10.60 Adjustment test, manifold-pressure compensator (LDA_ADA_ALDA) 1st version Setting 1/min : 500 Speed hPa : 1000 Pressure Contr.-rod trav.mm: 10.00...10.10 Measurement 1/min : 500 Speed 1st pressure hPa : 8.40...8.50 C-rod trav.mm : 200 2nd pressure hPa C-rod trav.mm : 8,70...8,80 3rd pressure hPa : 460 : 10.60...10.30 C-rod trav.mm SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press, hPa : 1000 1/min : 1100 Speed Del.quantity cm3/: 193.0...197.0 1000H.: (190.0...200.0) Charge press, hPa: 1000 1/min : 650 Speed

LOW IDLE

Speed 1/min: 300 Contr.-rod trav.mm: 5.20...5.40 Del.quantity cm3/: 12.0...18.0 1000H.: (9.0...21.0) Dispersion cm3/: 8.00 1000H.: (12.00)

...

Remarks:

L21

Note inst. in remarks column

Test sheet : MAN 10.0 B Edition : 18.09.87 Superceeded : -

Calibrating oil : ISO-4113

Combination no. : 0 402 035 021

Injection pump

Pump designation : PES5P120A720/3LS512

EP type number : 0 412 025 021

Governor

Governor design. : RQV300...1100PA876 Governer nc. : 0 421 813 661

Customer-spec. information Customer : MAN

Engine : D2865LF/260

1st version kW : 191.0 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60 HIGHEST RATED SPEED : (3.45...3.65) Contr.-rod trav.mm: 9.00...12.00 1st version Cam sequence : 1- 3- 5- 4- 2 Control-lever position degrees: 49...57 Testing: SD ang. spacing CS: 0-72-144-216-288 Tolerance + - : 0.50 (0.75) 1st c-rod trav.mm : 9.00 1/min: 1140...1150 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1215...1245 SD mark cyl. no. : 1 4th speed 1/min : 1350 BASIC SETTING C-rod trav.mm : 0.00...1.00 1st speed 1/mi: 750 LOWEST RATED SPEED I Control-lever Contr.-rod trav.mm: 10.70...10.80 position degrees: 14...22 Del.quantity cm3/ : 20.9...21.1 Testina: Speed 1/min : 100 100H.: (20.6...21.4) C-rod trav.mm min: 6.80 Speed 1/min: 300 : 5.20...5.40 Dispersion cm3/:0.5C-rod trav.mm CONSTANT REGULATION 100H.: (0.9) 1/min : 310...410 Speed 1/min: 300.0 2nd speed Contr.-rod trav. m: 5.2...5.4

Del.quantity cm3/: 1.2...1.8

100H.: (0.9...2.1)

Dispersion cm3/: 0.8

100H.: (1.2) TORQUE CONTROL Torque-control curve - 1st version
1st speed 1/min: 750
C-rod trav.mm: 10.70...10.80
2nd speed 1/min: 1100 C-rod trav.mm : 10.00...10.10 3rd speed 1/min: 900 (B) Setting of injection pump with C-rod trav.mm : 10.40...10.50 externally-mounted governor SLEEVE TRAVELS Adjustment test, manifold-pressure 1st speed 1/min: 300 Sleeve travel mm: 1.70...2.00 compensator (LDA, ADA, ALDA) 2nd speed 1/min: 850 Sleeve travel mm: 6.00...6.20 1st version 3rd speed 1/min: 1100 Sleeve travel mm: 8.10...8.30 Setting 1/min : 500 Speed Pressure hPa : 1000 Contr.-rod trav.mm: 10.00...10.10 SLEEVE POSITION Control-lever position Degree: -1 Measurement 1/min : 500 17min: 1130 Speed Cont.-rod travelmm: 15.20...17.80 1st pressure hPa : -: 8.40...8.50 FULL-LOAD DELIV. AT FULL-LOAD STOP C-rod trav.mm 2nd pressure hPa : 200 C-rod trav.mm : 8.70...8.80 1st version 1/min: 750 3rd pressure hPa : 460 Speed Charge press. hPa: 1000
Del.quantity cm3/: 209.0...211.0
1000H.: (206.0...214.0)
Dispersion cm3/: 5.00
1000H.: (9.00) : 10.00...10.30 C-rod trav.mm SWITCH-OVER POINT Speed 1/min : 220 (240)

```
FUEL-DELIVERY CHARACTERISTICS
ist version
Charge press. hPa : 1000
Speed
              1/min : 1100
Del.quantity cm3/: 193.0...197.0
              1000H.: (190.0...200.0)
Charge press. hPa : 1000
              1/min : 650
Speed
Del.quantity cm3/: 198.0...204.0
1000H.: (195.0...207.0)
Charge press. hPa : -
              1/min : 500
Speed
Del.quantity cm3/: 135.0...137.0
1000H.: (132.0...140.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 9.00
              1/min : 1140...1150
Speed
STARTING FUEL DELIVERY
Speed
              1/min : 100
Del.quantity cm3/: 225.0...245.0
              1000H.: (221.0...249.0)
LOW IDLE
Speed 1/min: 300
Contr.-rod trav.mm: 5.20...5.40
Del.quantity cm3/: 12.0...18.0
1000H.: (9.0...21.0)
Dispersion cm3/: 8.00
              1900H.: (12.00)
Remarks:
                      :
```

Note inst. in remarks column

Test sheet : MAN 11.99 Edition : 18.09.87 Superceeded : 31.7.87 Calibrating oil : ISO-4113 : MAN 11,9A24

Combination no. : 0 402 036 062

Injection pump

Pump designation : PES6P120A720/3LS470-

EP type number : 0 412 026 050

Governor

Governor design. : RQ300/1100PA813 Governor no. : 0 421 801 358

Customer-spec. information Customer

Engine : D2866LF

1st version kW : 243.0 1/min: 2200 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Openina

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 30...32

```
1/min: 1145...1160
Prestroke mm
                    : 2.80...2.90
                                                      2nd c-rod trav.mm: 4.00
                   : (2.75...2.95)
                                                                 1/min : 1180...1210
                                                        Speed
Contr.-rod trav.mm: 9.00...12.00
                                                      4th speed
                                                                   1/min: 1300
Cam sequence : 6-2-4-1-5-3
                                                        C-rod trav.mm : 0.00...1.00
                                                      LOWEST RATED SPEED I
                                                      Setting point w/out aux. spring
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                                  1/min : 300
                                                      Speed
                                                      Contr.-rod trav.mm: 4.8
SD mark cyl. no. : 6
                                                      Testing:
                                                                   1/min : 100
                                                      Speed
                                                      C-rod trav.mm min: 6.30
Speed 1/min: 300
BASIC SETTING
                                                      C-rod trav.mm : 4.70...4.90
C-rod trav.mm : 2.00
Speed 1/min : 340...380
1st speed
               1/mi: 750
Contr.-rod trav.mm: 11.30...11.40
Del.quantity cm3/: 20.7...20.9
                                                      TORQUE CONTROL
                                                      Dimension a mm : 0.50
                                                      Torque-control curve - 1st version
1st speed 1/min: 750
C-rod trav.mm: 12.00...12.30
              100H.: (20.4...21.2)
                       -------
Dispersion
              cm3/:0.5
                                                                  1/min : 1100
                                                      2nd speed
              100H.: (0.9)
                                                        C-rod trav.mm : 10.70...10.80
                                                      3rd speed 1/min: 900
                                                        C-rod trav.mm : 11.70...11.90
2nd speed
              1/min: 300.0
4th speed 1/min: 975
                                                        C-rod trav.mm : 11.00...11.30
                                                      Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA)
SLEEVE POSITION
Control-lever position
                                                      1st version
             Degree: -2
                                                      Setting
              1/min: 600
                                                                   1/min : 500
Speed
                                                      Speed
                                                                   hPa : 1000
Cont.-rod travelmm: 19.20...20.80
                                                      Pressure
                                                      Contr.-rod trav.mm: 11.30...11.40
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                      Measurement
                                                                   1/min : 500
                                                      Speed
1st version
Speed
              1/min: 750
Charge press. hPa: 100G
Del.quantity cm3/: 207.0...209.0
1000H.: (204.0...212.0)
Dispersion cm3/: 5.00
                                                      1st pressure hPa : -
                                                      C-rod trav.mm : 8.90...9.10
2nd pressure hPa : 85
                                                                         : 9.30...9.40
                                                        C-rod trav.mm
             1000H.: (9.00)
                                                      3rd pressure hPa : 280
                                                        C-rod trav.mm
                                                                         : 10.50...10.90
HIGHEST RATED SPEED
                                                      SWITCH-OVER POINT
1st version
                                                      Speed
                                                                  1/min : 190 (210)
Setting point:
                                                     FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 600
Contr.-rod trav.mm: 20.0
                                                      1st version
Testing:
1st c-rod trav.mm : 9.70
                                                      Charge press. hPa : 1000
L26
```

```
Speed 1/min: 1100
Del.quantity cm3/: 203.0...207.0
1000H.: (200.0...210.0)
Charge press. hPa : 1000
Speed
               1/min : 650
Del.quantity cm3/: 206.0...212.0
1000H.: (203.0...215.0)
Charge press. hPa: 80
               1/min : 500
Speed
Del.quantity cm3/: 184.0...196.0
1000H.: (181.0...199.0)
Charge press. hPa : -
               1/min : 500
Speed
Del.quantity cm3/: 132.0...134.0
               1000H.: (129.0...137.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 9.70
              1/min : 1145...1160
Speed
STARTING FUEL DELIVERY
Speed
               1/min : 100
Del.quantity cm3/ : 225.0...245.0
               1000H.: (221.0...249.0)
LOW IDLE
               1/min : 300
Speed
Contr.-rod trav.mm: 4.70...4.90
Del.quantity cm3/: 12.0...18.0
1000H.: (9.0...21.0)
Dispersion cm3/: 8.00
               1000H.: (12.00)
Remarks:
                      :
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ALO 13.8 Edition : 14.10.87 Superceeded : 7.86 Calibrating oil : ISO-4113 : ALO 13,8 A1 Combination no. : 0 402 046 202 Injection pump Pump designation : PES6P120A320RS410 Governor Governor design. : RQV300...875PA498K Customer-spec. information Customer : ALLIS CHALMERS : 6138 LT Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.5

Calibrating nozzle-holder : 0 681 443 022 assembly `

Opening pressure, bar : 172...175

Test inj. tubing : 1 680 750 060

Outside diameter x Wall thickness

: 8,00x2,00x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Prestroke mm : 2.80...2.90

: (2.75...2.95)

Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4

SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0,5(0,75)

```
SD mark cyl. no. : 1
                                                  Testing:
                                                  Speed
                                                              1/min : 100
BASIC SETTING
                                                  C-rod trav.mm min: 7,9
                                                  C-rod trav.mm : 2,0
                                                            1/min : 440...500
              1/mi: 875
1st speed
                                                  Speed
                                                             1/min : 550
                                                  Speed
Contr.-rod trav.mm: 8,7
                                                  C-rod trav.mm max: 1,0
Del.quantity cm3/: 16,1...16,3
                                                  TORQUE CONTROL
                                                  Torque-control curve - 1st version
                                                            1/min : 875
             100H.: (-)
                                                  1st speed
                    --------
                                                    C-rod trav.mm : 8,70
Dispersion
             cm3/:0,50
                                                  2nd speed 1/min: 600
                                                   C-rod trav.mm : 8,75, ...8,85
             100H.: (-)
                                                  SWITCH-OVER POINT
             1/min: 300
2nd speed
Contr.-rod trav. m: 5,2
                                                             1/min : 180...240
                                                  Speed
Del.quantity cm3/: 1,8...2,4
                                                  FUEL-DELIVERY CHARACTERISTICS
             100H.: (-)
             cm3/: 1.0
100H.: (-)
Dispersion
                                                  1st version
SLEEVE POSITION
                                                              1/min : 600
                                                  Speed
                                                 Del.quantity cm3/: 144,5...148,5
Control-lever position
                                                              1000H.: (140,5...152,5)
            Degree: -1
             17min: 900
Cont.-rod travelmm: 15,2...17,8
                                                  ROTATIONAL-SPEED LIMITATION
Governor-spring reload
Notch setting x : -
                                                  1st version
                                                  1mm control-rod travel less than
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                  full-load trav.mm: 7,7
                                                             1/min : 915...925
                                                  Speed
1st version
Speed
             1/min: 875
Del.quantity cm3/: 161.0...163.0
1000H.: (157,0...167,0)
                                                 STARTING FUEL DELIVERY
HIGHEST RATED SPEED
                                                             1/min : 100
                                                  Speed
                                                  Del.quantity cm3/: 130,0...170.0
ist version
                                                              1000H.: (-)
Control-lever
 position degrees: 58...66
                                                 LOW IDLE
                                                             1/min : 300
                                                  Speed
Testing:
                                                 Del.quantity cm3/: 18.0...24,0
1000H.: (-)
1st c-rod trav.mm : 7,7
  Speed 1/min: 915...925
2nd c-rod trav.mm : 4,0
          1/min : 945...975
                                                 Remarks:
  Speed
4th speed 1/min: 900
                                                                    :
  C-rod trav.mm : 0..1.0
LOWEST RATED SPEED I
Control-lever
position degrees: 8...16
Setting point w/out aux. spring
```

Speed 1/min: 300 Contr.-rod trav.mm: 5,1...5,3

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 2.80...2.90
                                                     Prestroke mm
                                                                         : (2.75...2.95)
Note inst. in remarks column
                                                     Contr.-rod trav.mm: 9.00...12.00
                                                     Cam sequence : 1-5-3-6-2-4
Test sheet
                   : RVI 9,8 C
                    : 09.10.87
Edition
Superceeded
                                                     SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no.
                   : 0 402 046 331
                                                     START OF DELIVERY DIFFERENCE
Injection pump
Pump designation : PES6P120A320RS514
                                                     betw.c-rod trav.mm: 10,00...11.00
EP type number : 0 412 026 052
Governor
                                                     BASIC SETTING
Governor design. : RQV275...1000PA495-9
Governer no. : 0 421 813 672
                                                                  1/mi: 550
                                                     1st speed
                                                     Del.quantity cm3/: 17.1...17.3
Customer-spec. information
Customer
                   : RV1
                                                                   100H.: (16.8...17.6)
Engine
                   : MIDRO62045 K
                                                                   cm3/:0.5
                                                     Dispersion
1st version kW : 176.5
             1/min: 2000
Speed
                                                                   100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                                   1/min: 275.0
                                                     2nd speed
                                                     Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                    : 1 417 413 025
                                                     (B) Setting of injection pump with
Inlet press., bar : 1.50
                                                         externally-mounted governor
                                                     SLEEVE TRAVELS
Calibrating nozzle-holder
                                                     1st speed 1/min: 275
Sleeve travel mm: 1.40...1.60
2nd speed 1/min: 500
Sleeve travel mm: 3.80...4.30
 assembly
               : 1 688 90% 019
Openina
                   : 207...210
 pressure, bar
                                                     3rd speed 1/min: 800
                                                     Sleeve travel mm: 5.70...6.10
4th speed 1/min: 1000
Sleeve travel mm: 7.20...7.40
Perforated-plate
                    : 0,8
diameter mm
Test inj. tubing : 1 680 750 067
                                                     SLEEVE POSITION
                                                     Control-lever position
Outside diameter
                                                                  Degree: -1
x Wall thickness
                                                                  1/min: 1120
                                                     Cont.-rod travelmm: 15.20...17.80
                   : 6.00x1.50x1000
x Length mm
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant,
                                                     1st version
    per values
                                                     Speed
                                                                   1/min: 550
                                                     Charge press. hPa: 1000
                                                     Del.quantity cm3/: 171.0...173.0
1000H.: (168.0...176.0)
START OF DELIVERY
Test pressure, bar: 25...27
```

```
Dispersion cm3/ : 5.00
                                                      C-rod trav.mm : 9.60...9.90
             1000H.: (9.00)
                                                    SWITCH-OVER POINT
HIGHEST RATED SPEED
                                                                 1/min : 195 (215)
                                                    Speed
1st version
Control-lever
                                                    FUEL-DELIVERY CHARACTERISTICS
 position degrees: 60...68
Testing:
                                                    1st version
1st c-rod trav.mm : 9.10
                                                    Charge press. hPa : 1000
           1/min: 1065...1075
                                                                 1/min : 1000
  Speed
                                                    Speed
                                                    Del.quantity cm3/: 160.0...164.0
1000H.: (157.0...167.0)
2nd c-rod trav.mm : 4.00
            1/min : 1165...1195
  Speed
             1/min : 1300
4th speed
                                                    Charge press. hPa:
                                                                 1/min : 500
  C-rod trav.mm : 0.00...1.00
                                                    Speed
                                                    Del.quantity cm3/: 105.0...107.0
LOWEST RATED SPEED I
                                                                 1000H.: (102.0...110.0)
Control-lever
 position degrees: 7...15
                                                    ROTATIONAL-SPEED LIMITATION
Testing:
Speed
             1/min : 200
                                                    1st version
C-rod trav.mm min : 7.20
                                                    1mm control-rod travel less than
            1/min : 275
Speed
                   : 5,30,...5,50
                                                     full-load trav.mm: 9.10
C-rod trav.mm
                                                                1/min : 1065...1075
                                                    Speed
CONSTANT REGULATION
            1/min : 300...405
                                                    STARTING FUEL DELIVERY
Speed
TORQUE CONTROL
Dimension a mm : 1.50
                                                                 1/min : 100
                                                    Speed
Torque-control curve - 1st version
                                                    Del.quantity cm3/: 140.0...160.0
1st speed 1/min: 550
                                                                 1000H.: (140.0...160.0)
                   : 11.60...11.70
  C-rod trav.mm
2nd speed 1/min: 1000
                                                    LOW IDLE
C-rod trav.mm : 10.00...10.10
3rd speed 1/min : 700
                                                    Speed 1/min: 275
Contr.-rod trav.mm: 5.30...5.50
  C-rod trav.mm : 11.20...11.30
                                                    Del.quantity cm3/: 14.0...20.0
1000H.: (11.0...23.0)
Dispersion cm3/: 8.00
1000H.: (12.00)
4th speed 1/min: 850
  C-rod trav.mm : 10.40...10.70
Adjustment test, manifold-pressure
compensator (LDA,ADA,ALDA)
                                                    Remarks:
                                                    Start-of-delivery mark 10.5° cam angle
1st version
Setting
                                                    after start of delivery cyl. 1
            1/min : 500
Speed
            hPa : 1000
Pressure
Contr.-rod trav.mm: 11.60...11.70
Measurement
            1/min : 500
Speed
1st pressure hPa
                   : 9.00...9.20
 C-rod trav.mm
2nd pressure hPa : 360
```

C-rod trav.mm : 11.20...11.30 3rd pressure hPa : 160

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                        SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
Test sheet
                    : KHD 9,6 Q
: 09.10.87
Edition
Superceeded
                    : 12.9.86
                                                        SD mark cyl. no. : 1
                   : ISO-4113
Calibrating oil
                                                        BASIC SETTING
Combination no.
                    : 0 402 046 761
                                                        1st speed
                                                                        1/mi: 1150
Injection pump
Pump designation : PES6P110A720RS3104
                                                        Contr.-rod trav.mm: 14.60...14.70
EP type number
                    : 0 412 016 712
                                                        Del.quantity cm3/: 18.4...18.6
Governor
Governor design. : RQV300...1150PA549-2
                                                                       100H.: (18.1...18.9)
Governer no.
                    : 0 421 813 491
                                                                      cm3/:0.4
Customer-spec. information
                                                        Dispersion
Customer
                    : KHD
                                                                       100H.: (0.7)
                    : BF6L413FRC
Engine
                                                       2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...8.0
Del.quantity cm3/: 1.6...2.2
1st version kW : 210.0
              1/min: 2300
Speed
                                                                       100H.: (1.3...2.4)
                                                                      cm3/: 0.4
100H.: (0.7)
TEST BENCH REQUIREMENTS
                                                        Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                        (B) Setting of injection pump with externally-mounted governor
Overflow valve
                     : 1 417 413 025
                                                        SLEEVE TRAVELS
                                                        1st speed 1/min: 300
                                                       Sleeve travel mm: 1.10...1.50
2nd speed 1/min: 400
Sleeve travel mm: 2.50...3.00
Inlet press., bar : 1.50
Calibrating nozzle-holder
                 : 0 681 343 009
                                                        3rd speed 1/min: 600
 assembly
                                                          Sleeve travel mm: 3.80...4.30
                                                        4th speed 1/min: 1200
Opening
 pressure, bar : 172...175
                                                          Sleeve travel mm: 8.40...8.60
                                                        5th speed 1/min: 1330
                                                          Sleeve travel mm: 9.80...10.20
Test inj, tubing
                    : 1 680 750 015
                                                        SLEEVE POSITION
Outside diameter
                                                        Control-lever position
                                                                     Degree: -1
1/min: 1170
x Wall thickness
x Length mm
                    : 6.00X1.50X600
                                                        Speed
                                                        Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    Insp. values in parentheses
    Set constant delivery quant.
    per values
                                                       1st version
                                                       Speed
                                                                      1/min: 1150
                                                       Charge press. hPa : 900
START OF DELIVERY
                                                       Del.quantity cm3/: 184.0...186.0
1000H.: (181.0...189.0)
Dispersion cm3/: 4.00
Prestroke mm
                    : 2.80...2.90
                    : (2.75...2.95)
                                                                     1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 51...59 Testing: 1st c-rod trav.mm : 13.60 1/min: 1190...1200 2nd c-rod trav.mm: 4.00 1/min: 1320...1350 Speed 1/min : 1450 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Testing: 1/min : 100 Speed C-rod trav.mm min: 9.30 1/min : 300 mm : 7.80...8.00 Speed C-rod trav.mm CONSTANT REGULATION 1/min : 300...480 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1150 C-rod trav.mm: 14.60...14.70 2nd speed 1/min: 700 C-rod trav.mm : 14.80...14.90 Adjustment test, manifold-pressure compensator (LDA, ADA, ALDA) 1st version Setting Speed 1/min : 450 Pressure hPa : 900 Contr.-rod trav.mm: 14.80...14.90 Measurement 1/min : 450 Speed 1st pressure hPa : 12.40...12.50 C-rod trav.mm 2nd pressure hPa : 500 C-rod trav.mm : 13.90...14.00 3rd pressure hPa : 360 : 12.70...12.90 C-rod trav.mm SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS M06

1st version Charge press. hPa : 900 1/min : 700 Speed Del.quantity cm3/: 189.0...193.0 1000H.: (186.0...196.0) Charge press. hPa : -1/min: 450 Speed Del.quantity cm3/: 123.0...125.0 1000H.: (120.0...128.0) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 13.60 Speed 1/min : 1190...1200 STARTING FUEL DELIVERY Speed 1/min : 100 Del.quantity cm3/: 135.0...155.0 1000H.: (131.0...159.0) Remarks: Check electrically unlatched starting fuel delivery (EES) with 24 volt.

```
: 1- 4- 2- 6- 3- 5
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence
Note inst. in remarks column
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Talerance + - : 0.50 (0.75)
                    : ROL 12.2 I1
: 09.10.87
Test sheet
Ediction
Superceeded
Calibrating oil
                    : ISO-4113
                                                       SD mark cyl. no. : 1
                    : 0 402 046 779
Combination no.
                                                       BASIC SETTING
Injection pump
                                                       1st speed
                                                                       1/mi: 700
Pump designation : PES6P120A320RS3170-1
                                                       Contr.-rod trav.mm: 13.10...13.20
EP type number
                    : 0 412 026 726
Governor
Governor design: RQ750PA826-1
Governer no: : 0 421 801 36
                                                       Del.quantity cm3/ : 21.2...21.4
                    : 0 421 801 366
                                                                      100H.: (20.9...21.7)
Customer-spec. information
Customer
                    : PERKINS
                                                                      cm3/:0.5
                                                       Dispersion
Engine
                    : EAGLE LE
                                                                      100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                       2nd speed
                                                                      1/min: 250.0
                                                       Contr.-rod trav. m: 5.9...6.1
Del.quantity cm3/: 1.7...2.3
100H.: (1.4...2.6)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                      cm3/:0.8
                                                       Dispersion
Overflow valve
                                                                      100H.: (1.2)
                     : 1 417 413 025
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar: 1.50
                                                       1st version
                                                                      1/min: 700
Calibrating nozzle-holder
                                                       Speed
                  : 1 688 901 019
                                                       Del.quantity cm3/: 212.0...214.0
1000H.: (209.0...217.0)
 assembly
                                                                    cm3/ : 5.00
Opening
                                                       Dispersion
                    : 207...210
                                                                    1000H.: (9.00)
 pressure, bar
Perforated-plate
                                                       HIGHEST RATED SPEED
 diameter mm
                    : 0.8
                                                       1st version
                                                       Testing:
Test inj. tubing
                   : 1 680 750 067
                                                       1st c-rod trav.mm : 12.10
                                                                    1/min : 750...755
Outside diameter
                                                         Speed
                                                       2nd c-rod trav.mm : 4.00
x Wall thickness
                                                                    1/min : 776...789
                    : 6.00x1.50x1000
                                                         Speed
x Length mm
                                                                    1/min : 900
                                                       4th speed
                                                                           : 0.00...1.00
(A) Injection pump setting values
                                                         C-rod trav.mm
    Insp. values in parentheses
Set constant delivery quant.
                                                       SWITCH-OVER POINT &
    per values
                                                                    1/min: 690 (0)
                                                       Speed
START OF DELIVERY
Test pressure, bar: 25...27
                                                       ROTATIONAL-SPEED LIMITATION
Prestroke mm
                    : 3.50...3.60
: (3.45...3.65)
Contr.-rod trav.mm: 9.00...12.00
                                                       1st version
M07
```

1mm control-rod travel less than full-load trav.mm: 12.10 Speed 1/min: 750...755 STARTING FUEL DELIVERY Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0) Remarks: : APPLICATION Generator MO8

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0,5(0.75) Note inst. in remarks column Test sheet : DEE 7,6 L SD mark cyl. no. : 1 : 14.10.87 Edition Superceeded : 7.86 BASIC SETTING Calibrating oil : ISO-4113 1st speed 1/mi: 1050 Combination no. : 0 402 076 026 Contr.-rod trav.mm: 11,7 Injection pump Pump designation : PES6P110A720RS305 Del.quantity cm3/: 16,0...16,2 Governor Governor design. : RSV400...1050P2/399D Dispersion cm3/:0,401/min: 400 2nd speed Contr.-rod trav. m: 6,0 Del.quantity cm3/: 1,3...1,9 Dispersion cm3/: 0,20 Customer-spec. information : JOHN DEERE Customer : 6466 A Engine SLEEVE POSITION TEST BENCH REQUIREMENTS Control-lever position Degree: -3 Calibrating-oil inlet temp. OC 17min: 800 Speed : 38...42 Cont.-rod travelmm: 0.3...1.0 Overflow valve Governor-spring reload : 1 417 413 050 Notch setting x : -FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 Calibrating nozzle-holder 1st version Speed 1/min: 1050
Del.quantity cm3/: 160,0...162,0
1000H.: (-)
Dispersion cm3/: 4.0 : 0 681 343 009 assembly Opening pressure, bar : 172...175 1000H.: (-) HIGHEST RATED SPEED Test inj. tubing : 1 680 750 015 Outside diameter 1st version Control-lever x Wall thickness : 6,00x1,50x600 position degrees: 40...48 x Length mm (A) Injection pump setting values Testing: Insp. values in parentheses Set constant delivery quant. 1st c-rod trav.mm: 10.7 Speed 1/min: 1085...1100 2nd c-rod trav.mm : 5.1 Speed 1/min : 1155 per values START OF DELIVERY Test pressure, bar: 2,8...2,9 LOWEST RATED SPEED I Date of mfg. : (2,75...2 Control-lever position degrees: 17...25 Setting point w/out aux. spring Prestroke mm : 2.80...2.90 : (2.75...2.95) Contr.-rod trav.mm: 9.00...12.00 1/min : 400 Contr.-rod trav.mm: 5,5 Cam sequence : 1-5-3-6-2-4 Testing: 1/min : 100 Speed

C-rod trav.mm min: 19,0 Speed 1/min: 400 C-rod trav.mm : 6,0 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1050 C-rod trav.mm : 11.90 2nd speed 1/min: 650 C-rod trav.mm : 12.15...12.45 Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 500 hPa : 170 Pressure Measurement 1/min : 500 Speed 1st pressure hPa : 710 FUEL-DELIVERY CHARACTERISTICS 1st version 1/min : 650 Speed Del.quantity cm3/: 170.0...173.0 1000H.: (-) Speed 1/min: 500 Del, quantity cm3/: 89.0...95.0 1000H.: (-) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 10,7 peed 1/min: 1085....1100 Speed STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 140,0...180,0 HIGH IDLE 1st version 1/min : 1155 Speed Contr.-rod trav.mm: 5.10 Del.quantity cm3/: 32.5...37.5 LOW IDLE

M10

Speed 1/min: 400 Del.quantity cm3/: 13,0...19,0 1000H.: (-)

Remarks:

Start-of-delivery mark is at 15° angular displacement of the cam after start of delivery at cylinder 1 with control-rod travel 9.00...12.00 mm

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                      : 4.30...4.40
                                                   Prestroke mm
                                                                      : (4.25...4.45)
Note inst. in remarks column
                                                    Contr.-rod trav.mm: 9.00...12.00
                                                    Cam sequence : 6-2-4-1-5-3
Test_sheet
                   : MB 11,7 E 1
                   : 09.10.87
Edition
Superceeded
                                                   SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - ^{\circ}: 0.50 (0.75)
Calibrating oil : ISO-4113
                   : 0 402 076 724
Combination no.
                                                   SD mark cyl. no. : 6
Injection pump
Pump designation : PES6P110A820L$3131-1
                                                   BASIC SETTING
EP type number : 0 412 016 717
                                                                 1/mi: 700
Governor
                                                   1st speed
Governor design.: RSV350...750P0A536
Governer no. : 0 421 833 279
                                                   Contr.-rod trav.mm: 12.20...12.30
                                                   Del.quantity cm3/: 13.5...13.7
Customer-spec. information
                  : DAIMLER-BENZ
Customer
                                                                 100H.: (13.2...13.9)
                   : 0M427
Engine
                                                                 cm3/:0.4
                                                   Dispersion
1st version kW : 129.0
         1/min: 1500
                                                                 100H.: (0.8)
Speed
TEST BENCH REQUIREMENTS
                                                   2nd speed
                                                                 1/min: 350.0
                                                   Contr.-rod trav. m: 6.9...7.1
                                                   Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/: 0.4
100H.: (0.7)
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                   : 1 417 413 025
                                                   SLEEVE POSITION
                                                   Control-lever position
Inlet press., bar: 1.50
                                                                Degree: -3
                                                                 17min: 800
Overflow
                                                   Cont.-rod travelmm: 0.30...0.70
 quantity min. 1/h: 100...120
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
          : 0 681 343 009
 assembly
                                                   1st version
                                                                 1/min: 700
                                                   Speed
Opening
pressure, bar : 172...175
                                                   Del.quantity cm3/: 135.0...137.0
1000H.: (132.5...139.5)
                                                   Dispersion cm3/: 4.00
1000H.: (8.00)
Test in i. tubing : 1 680 750 015
                                                   HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                   : 6,00x1,50x600
                                                   1st version
x Length mm
                                                   Control-lever
(A) Injection pump setting values
                                                    position degrees: 24...32
    Insp. values in parentheses
    Set constant delivery quant.
                                                   Testing:
    per values ____
                                                   1st c-rod trav.mm : 11.20
                                                     Speed 1/min: 750...755
                                                   2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                     Speed 1/min: 775...788
Test pressure, bar: 25...27
M11
```

LOWEST RATED SPEED I Control-lever position degrees: 13...21
Setting point w/out aux. spring
Speed 1/min: 350
Contr.-rod trav.mm: 7.0 Testing: Speed 1/min : 100 C-rod trav.mm min : 19.50 Speed 1/min: 350 C-rod trav.mm : 6.90...7.10 C-rod trav.mm : 2.00 Speed 1/min : 360...400 SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00 ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 11.20 1/min : 740...750 Speed STARTING FUEL DELIVERY Speed 1/min : 100 Del.quantity cm3/: 130.0...150.0 1000H.: (126.0...154.0) Remarks: Observe VDT-I-420/120 APPLICATION Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        START OF DELIVERY
                                                        Test pressure, bar: 25...27
Note inst. in remarks column
                                                                            : 5.20...5.30
                                                        Prestroke mm
Test sheet
                    : MB 21,9 J
                                                                            : (5.15...5.35)
                                                        Contr.-rod trav.mm: 19.00...21.00
Cam sequence : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7
                    : 18.09.87
Edition
Superceeded
                    : 26.6.87
                  : ISO-4113
Calibrating oil
Combination no. : 0 402 640 809
                                                        SD ang. spacing CS: 0-45-60-105-120-165-
Injection pump
Pump designation : PE12P120A320LS7813
                                                                              180-225-240-285-300-
EP type number
                 : 0 412 620 809
                                                                              345
                                                        Tolerance + - 0
                                                                            : 0.50 (0.75)
Governor
Governor design. : RQV350...1050PA870
Governer no. : 0 421 813 640
                                                        SD mark cyl. no. : 12
Customer-spec. information
                                                        BASIC SETTING
Customer
                    : DAIMLER-BENZ
                                                                   1/mi: 650
                                                        1st speed
                    : OM 444 LA
Engine
                                                        Contr.-rod trav.mm: 14.30...14.50
1st version kW : 552.0
               1/min: 2100
                                                        Del.quantity cm3/: 22.4...22.6
Speed
                                                                       100H.: (22.1...22.9)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                                      cm3/:0.5
                                                        Dispersion
                    : 38...42
                                                                      100H.: (0.9)
Overflow valve
                                                       2nd speed 1/min: 350.0

Contrared trav. in: 5.2...5.4

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/: 0.8
                    : 1 417 413 025
Inlet press., bar: 1.50
Overflow
                                                                       100H.: (1.2)
 quantity min. 1/h: 150...170
                                                        (B) Setting of injection pump with
Calibrating nozzle-holder
               : 1 688 901 019
 assembly
                                                            externally-mounted governor
                                                        SLEEVE TRAVELS
Opening
                   : 207...210
                                                        1st speed 1/min: 350
pressure, bar
                                                          Sleeve travel mm: 1.90...2.10
                                                        2nd speed 1/min: 700
Perforated-plate
                                                         Sleeve travel mm: 4.10...4.50
diameter mm
                    : 0,8
                                                       3rd speed 1/min: 1100
Sleeve travel mm: 7.60...8.00
4th speed 1/min: 1200
Sleeve travel mm: 9.50...9.90
Test inj. tubing : 1 680 750 067
Outside diameter
                                                        SLEEVE POSITION
x Wall thickness
                   : 6.00x1.50x1000
                                                       Control-lever position
x Length mm
                                                                     Degree: -1
                                                                      17min: 1150
(A) Injection pump setting values
                                                       Speed
                                                       Cont.-rod travelmm: 15,20...17.80
    Insp. values in parentheses
    Set constant delivery quant.
    per values
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
```

```
1st version
                                                         C-rod trav.mm
                                                                            : 13.40...13.60
Speed
               1/min: 650
                                                                            : 1200
                                                       3rd pressure hPa
Charge press. hPa: 850
                                                         C-rod trav.mm
                                                                            : 14.60...14.80
Del. quantity cm3/: 224.0...226.0
                                                       4th pressure hPa : 1400
             1000H.: (221.0...229.0)
                                                         C-rod trav.mm
                                                                            : 15.20...15.40
             cm3/ : 5.00
Dispersion
             1000H.: (9,00)
                                                       SWITCH-OVER POINT
HIGHEST RATED SPEED
                                                       Speed
                                                                     1/min: 270 (290)
                                                       FUEL-DELIVERY CHARACTERISTICS
1st version
Control-lever
 position degrees: 64...72
                                                       1st version
Testing:
                                                       Charge press. hPa : 1700
                                                                     1/min : 1050
1st c-rod trav.mm : 14.50
                                                       Speed
  Speed 1/min: 1090...1100
                                                       Del.quantity cm3/: 256.0...259.0
1000H.: (253.0...262.0)
2nd c-rod trav.mm : 4.00
Speed 1/min : 1190...1220
4th speed 1/min : 1300
                                                                     cm3/: 8.00
1000H.: (12.0)
                                                       Dispersion
  C-rod trav.mm : 0.00...1.00
                                                       Charge press. hPa : 1700
                                                                     1/min : 900
                                                       Speed
                                                       Del.quantity cm3/: 270.0...274.0
LOWEST RATED SPEED I
                                                                     1000H.: (267.0...277.0)
Control-lever
                                                                      cm3/:8.00
 position degrees: 14...22
                                                       Dispersion
                                                                     1000H.: (12.0)
                                                       Charge press. hPa : 1700
Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.70
                                                                     1/min : 1050
                                                       Speed
                                                       Del.quantity cm3/: 185.0...188.0 * 1000H.: (182.0...191.0)
             1/min : 350
Speed
                   : 5.20...5.40
                                                                     cm3/: 8.00
C-rod trav.mm
                                                       Dispersion
                                                                     1000H.: (12.0)
                                                       Charge press. hPa : -
CONSTANT REGULATION
                                                                     1/min : 500
             1/min : 350...600
Speed
                                                       Speed
                                                       Del.quantity cm3/: 139.0...141.0
1000H.: (136.0...144.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
TORQUE CONTROL
Torque-control curve - 1st version 1st speed 1/min : 1050
  C-rod trav.mm
                    : 15.30...15.50
2nd speed
             1/min : 1000
  C-rod trav.mm : 15.60...15.80
                                                       ROTATIONAL-SPEED LIMITATION
3rd speed 1/min: 950
  C-rod trav.mm : 15.80...16.00
                                                       1st version
                                                       1mm control-rod travel less than
Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA)
                                                        full-load trav.mm: 14,50
                                                       Speed
                                                                    1/min : 1090...1100
                                                       STARTING FUEL DELIVERY
1st version
Setting
             1/min : 600
Speed
             hPa : 850
Pressure
                                                       Speed
                                                                    1/min : 100
                                                       Del.quantity cm3/: 260.0...280.0
1000H.: (256.0...284.0)
Contr.-rod trav.mm: 14.30...14.50
Measurement
             1/min : 600
                                                       Remarks:
Speed
1st pressure hPa : 350
  C-rod trav.mm : 10.80...11.00
                                                       * = Set at reduced-delivery stop.
2nd pressure hPa : 600
```

Note inst. in remarks column

Test sheet : MB 11.0 T Edition : 09.10.87 Superceeded : 14.8.87 Calibrating oil : ISO-4113

Combination no. : 0 402 646 838

Injection pump

Pump designation : PE6P120A320LS7808

EP type number : 0 412 626 816

Governor

Governor design. : RQ300/1050PA762-4

Governer no. : 0 421 801 390

Customer-spec. information

: DAIMLER-BENZ Customer

Engine : 0M441 LA

1st version kW : 240.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

```
START OF DELIVERY
                                                                               1/min: 600
                                                              Test pressure, bar: 25...27
Prestroke mm : 5.30...5.40
: (5.25...5.45)
Contr.-rod trav.mm: 20.00...21.00
Cam sequence : 6-3-5-2-4-1
                                                               HIGHEST RATED SPEED
                                                               1st version
SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{+}: 0.50 (0.75)
                                                               Setting point:
                                                               Speed 1/min: 600
                                                               Contr.-rod trav.mm: 20.0
SD mark cyl. no. : 6
BASIC SETTING
                                                               Testing:
                                                               1st c-rod trav.mm : 13.80
                                                               Speed 1/min: 1095...1110
2nd c-rod trav.mm: 4.00
1st speed
                 1/mi: 600
Contr.-rod trav.mm: 13.90...14.10
                                                                 Speed 1/min: 1170...1200
                                                               4th speed 1/min: 1300
                                                                 C-rod trav.mm : 0.00...1.50
Del.quantity cm3/: 21.1...21.3
                 100H.: (20.8...21.6)
                                                               LOWEST RATED SPEED I
                          -----
                                                               Setting point W/out aux. spring
Speed 1/min: 300
Dispersion
                cm3/:0.5
                                                               Contr.-rod trav.mm: 5.8
                 100H.: (0.9)
                                                               Testing:
2nd speed 1/min: 300.0

Contr.-rod trav. m: 5.7...6.0

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/: 0.6
                                                              Speed 1/min: 200
C-rod trav.mm min: 7.70
Speed 1/min: 300
                                                              C-rod trav.mm : 5.70...6.00
C-rod trav.mm : 2.00
Speed 1/min : 370...410
                100H.: (1.0)
(B) Setting of injection pump with externally-mounted governor
                                                               TORQUE CONTROL
                                                              Dimension a mm : 0.30
2nd speed 1/min : 1050
C-rod trav.mm : 14.80...15.00
3rd speed 1/min : 800
SLEEVE TRAVELS
1st speed 1/min: 300
  Sleeve travel mm: 2.10...2.30
                                                                 C-rod trav.mm : 15.10...15.30
2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 875
                                                              Adjustment test, manifold-pressure
                                                                compensator (LDA, ADA, ALDA)
Sleeve travel mm: 6.20...6.30
4th speed 1/min: 1100
Sleeve travel mm: 6.60...6.80
                                                               1st version
5th speed 1/min: 1150
Sleeve travel mm: 9.30...9.70
                                                              Setting
                                                                              1/min : 600
                                                              Speed
                                                                             hPa : 900
                                                              Pressure
                                                              Contr.-rod trav.mm: 13.90...14.10
SLEEVE POSITION
Control-lever position
               Degree: -2
1/min: 600
                                                              Measurement
Speed
                                                              Speed
                                                                            1/min : 600
Cont.-rod travelmm: 19.20...20.80
                                                              1st pressure hPa : 300
C-rod trav.mm : 10.70...10.90
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                              2nd pressure hPa : 550
1st version
                                                                 C-rod trav.mm : 12.70...12.90
M17
```

```
3rd pressure hPa : 1050
                   : 14.00...14.10
  C-rod trav.mm
                  : 1150
4th pressure hPa
                   : 14.40...14.60
  C-rod trav.mm
SWITCH-OVER POINT
Speed
             1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1350
             1/min : 1050
Speed
Del.quantity cm3/ : 236.0...239.0
             1000H.: (233.0...242.0)
             cm3/:8.00
Dispersion
             1000H.: (12.0)
Charge press. hPa: 1350
Speed
             1/min : 800
Del.quantity cm3/: 242.0...246.0
             1000H.: (239.0...249.0)
             cm3/ : 8.00
Dispersion
             1000H.: (12.0)
Charge press. hPa : -
             1/min : 500
Speed
Del.quantity cm3/: 135.0...137.0
1000H.: (132.0...140.0)
             cm3/:8.00
Dispersion
             1000H.: (12.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 13.80
Speed
            1/min : 1095...1110
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 190.0...210.0
            1000H.: (186.0...214.0)
Remarks:
                   :
```

Note inst. in remarks column

Test sheet : MB 14,7 A 1 Edition : 18.09.87 Superceeded : 5.11.86 Calibrating oil : ISO-4113

Combination no. : 0 402 648 812

Injection pump

Pump designation : PE8P12DA32DLS7801 EP type number : 0 412 628 806

Governor Governor design. : RQ300/1050PA717 Governer no. : 0 421 801 258

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : 0M442 LA

1st version kW : 320.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow | quantity min. 1/h: 100...120

Calibrating nozzle-holder assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

```
START OF DELIVERY
                                                     Contr.-rod trav.mm: 20.0
Test pressure, bar: 25...27
                                                     Testing:
                    : 5.20...5.30
: (5.15...5.35)
                                                     1st c-rod trav.mm : 14.40
Speed 1/min : 1095...1110
Prestroke mm
Contr.-rod trav.mm: 20.00...21.00
                                                     2nd c-rod trav.mm : 4.00
                    : 8- 7- 2- 6- 3-
                                                                 1/min: 1160...1190
Cam sequence
                                                       Speed
                      4- 1
                                                                  1/min : 1300
                                                     4th speed
                                                       C-rod trav.mm : 0.00...1.50
                                                     LOWEST RATED SPEED I
SD ang. spacing CS: 0-45-90-135-180-225-
                                                    Setting point W/out aux. spring Speed 1/min: 300
                      270-315
Tolerance + - 0
                    : 0.50 (0.75)
                                                     Contr.-rod trav.mm: 6.4
SD mark cyl. no. : 8
                                                     Testing:
                                                                  1/min : 200
                                                     Speed
BASIC SETTING
                                                     C-rod trav.mm min: 8.00
                                                               1/min : 300
                                                     Speed
1st speed 1/mi: 600
                                                     C-rod trav.mm : 6.10...6.70
                                                                 nm : 2.00
1/min : 380...420
                                                     C-rod trav.mm
Contr.-rod trav.mm: 14.80...15.00
                                                     Speed
Del.quantity cm3/: 21.6...21.8
                                                     TORQUE CONTROL
                                                                        : 0.35
                                                     Dimension a mm
              100H.: (21.3...22.1)
                                                     2nd speed 1/min: 1050
                                                       C-rod trav.mm : 15.40...15.70
Dispersion
                                                     3rd speed 1/min: 850
              cm3/:0.5
                                                       C-rod trav.mm : 16.00...16.20
              100H.: (0.9)
                                                     Adjustment test, manifold-pressure
              1/min: 300.0
                                                     compensator (LDA, ADA, ALDA)
2nd speed
Contr.-rod trav. m: 6.1...6.7
Del.quantity cm3/ : 1.6...2.2
              100H.: (1.3...2.5)
                                                     1st version
              cm3/: 0.6
100H.: (1.0)
Dispersion
                                                     Setting
                                                                  1/min : 600
                                                     Speed
                                                     Pressure
                                                                 hPa : 680
SLEEVE POSITION
                                                     Contr.-rod trav.mm: 14.80...15.00
Control-lever position
                                                    Measurement
             Degree: -2
              17min: 600
                                                                 1/min : 600
                                                     Speed
Cont.-rod travelmm: 19.20...20.80
                                                     1st pressure hPa : 310
                                                    C-rod trav.mm : 12.20...12.40
2nd pressure hPa : 470
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                     C-rod trav.mm : 13.80...14.00
3rd pressure hPa : 820
1st version
Speed
              1/min: 600
Charge press. hPa : 680
                                                       C-rod trav.mm : 15.00...15.10
Del.quantity cm3/: 216.0...218.0
1000H.: (213.0...221.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                                                     4th pressure hPa : 1100
                                                      C-rod trav.mm
                                                                       : 16.00...16.10
                                                     5th pressure hPa : -
                                                      C-rod trav.mm
                                                                        : 11.60...11.70
                                                    SWITCH-OVER POINT
HIGHEST RATED SPEED
                                                                 1/min : 220 (240)
1st version
                                                    Speed
                                                    FUEL-DELIVERY CHARACTERISTICS
Setting point:
         1/min : 600
Speed
```

Note inst. in remarks column

Test sheet : SCA 14,2 DZ : 09.10.87 Edition Superceeded : 26.8.87 : ISO-4113 Calibrating oil

Combination no. : 0 402 648 815

Injection pump

: PE8P120A920/4LS7008X Pump designation

EP type number : 0 412 628 812

Governor

Governor design. : RQV200...950PA547-6 Governer no. : 0 421 813 499

Customer-spec. information

Customer : SAAB-SCANIA

Engine : DSC14 02

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 25...27

: 4.50...4.60 Prestroke mm : (4.45...4.65)

Contr.-rod trav.mm: 6.00...8.00

```
: 1- 2- 7- 3- 4- 5-
6- 8
Cam sequence
                                                      1st version
                                                                    1/min: 700
                                                      Speed
                                                      SD ang. spacing CS: 0-45-90-135-180-225-
                      270-315
Tolerance + - 0
                    : 0.50 (0.75)
SD mark cyl. no. : 1
                                                      HIGHEST RATED SPEED
START OF DELIVERY DIFFERENCE
                                                      1st version
                                                      Control-lever
betw.c-rod trav.mm: 7.00...12.80 & c-rod trav max. : 21.00 Difference CS : 1.05...1.75
                                                       position degrees: 55...63
                                                      Testing:
                                                      1st c-rod trav.mm : 11.80
BASIC SETTING
                                                                 1/min : 990...1000
                                                        Speed
                                                      2nd c-rod trav.mm : 4.00
                                                        Speed 1/min: 1090...1120 th speed 1/min: 1250 C-rod trav.mm: 0.00...1.00
1st speed 1/mi: 700
                                                      4th speed
Contr.-rod trav.mm: 12.80...12.90
Del.quantity cm3/: 18.3...18.5
                                                      LOWEST RATED SPEED I
                                                      Control-lever
              100H.: (18.0...18.8)
                                                       position degrees: 6...14
Dispersion
              cm3/:0.7
                                                      Testing:
                                                                   1/min : 100
                                                      Speed
                                                      C-rod trav.mm min : 6.20
              100H.: (1.0)
                                                      Speed 1/min: 225
                                                      C-rod tray.mm : 4.70...4.90
             1/min: 225.0
2nd speed
                                                                  mm : 2.00
1/min : 330...390
Contr.-rod trav. m: 4.7...4.9
                                                      C-rod trav.mm
Del.quantity cm3/: 1.4...1.8
                                                      Speed
              100H.: (-)
              cm3/: 0.3
100H.: (0.6)
                                                      Adjustment test, manifold-pressure compensator (LDA,ADA,ALDA)
Dispersion
(B) Setting of injection pump with
    externally-mounted governor
                                                      1st version
                                                      Setting
SLEEVE TRAVELS
                                                                   1/min : 500
                                                      Speed
                                                      Pressure hPa : 900
1st speed 1/min: 225
Sleeve travel mm: 1.30...1.40
2nd speed 1/min: 260
Sleeve travel mm: 1.70...1.90
3rd speed 1/min: 360
Sleeve travel mm: 2.60...3.00
                                                      Contr.-rod trav.mm: 12.80...12.90
                                                      Measurement
                                                                   1/min : 500
                                                      Speed
4th speed 1/min: 1000
                                                      1st pressure hPa : -
                                                        C-rod trav.mm : 11.00...11.10
  Sleeve travel mm: 7.90...9.00
5th speed 1/min: 1110
                                                      3rd pressure hPa : 215
  Sleeve travel mm: 9.30...9.50
                                                        C-rod travamm
                                                                          : 11.60...11.80
                                                      FUEL-DELIVERY CHARACTERISTICS
SLEEVE POSITION
Control-lever position
             Degree: -1
              17min: 1040
Speed
                                                      1st version
Cont.-rod travelmm: 15.20...17.80
                                                      Charge press, hPa : 900
                                                               1/min : 950
                                                      Speed
FULL-LOAD DELIV. AT FULL-LOAD STOP
```

```
Del.quantity cm3/: 177.0...185.0
             1000H.: (175.0...187.0)
Charge press. hPa : -
             1/min : 500
Speed
Del.quantity cm3/: 146.0...150.0
1000H.: (144.0...152.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.80
            1/min: 990...1000
Speed
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 240.0...290.0
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
             1/min : 225
Speed
Contr.-rod trav.mm: 4.70...4.90
Del.quantity cm3/: 14.0...18.0 Dispersion cm3/: 3.00
             1000H.: (6.00)
Remarks:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.
ADDITIONAL INFORMATION
Check and set without ROBO diaphragam
For comb, with letter index see
VDT-1-400/116.
For sealing see VDT-I-400/117.
```

Scania test specifications taken over on May 3, 1985 Start of delivery - engine: 22° before TDC at control-rod travel = 6.0... 8.0 mm Engine firing sequence: 1-5-4-2-6-3-7-8

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                  START OF DELIVERY
                                                  Test pressure, bar: 25...27
Note inst. in remarks column
                                                                     : 5.20...5.30
                                                  Prestroke mm
Test sheet
                  : MB 14,7 B
                                                                     : (5.15...5.35)
                  : 18.09.87
                                                  Contr.-rod trav.mm: 20.00...21.00
Edition
Superceeded
                  : 14.11.87
                                                                     : 8- 7- 2- 6- 3- 5-
                                                  Cam sequence
Calibrating oil : ISO-4113
                                                                       4- 1
Combination no.
                  : 0 402 648 824
Injection pump
                                                  SD ang. spacing CS: 0-45-90-135-180-225-
Pump designation : PE8P120A320LS7801
                                                                       270-315
                                                  Tolerance + - 0
                                                                     : 0.50 (0.75)
EP type number : 0 412 628 806
Governor
Governor design. : RQV300..1050PA797
                                                  SD mark cyl. no. : 8
Governer no.
                  : 0 421 813 532
                                                  BASIC SETTING
Customer-spec. information
Customer
                  : DAIMLER-BENZ
                                                                 1/mi: 600
                                                  1st speed
                                                  Contr.-rod trav.mm: 14.80...15.00
                  : 0M442 LA
Engine
1st version kW : 320.0
                                                  Del.quantity cm3/: 21.6...21.8
Speed
             1/min: 2100
                                                                100H.: (21.3...22.1)
TEST BENCH REQUIREMENTS
                                                  Dispersion
                                                               cm3/:0.5
Calibrating-oil inlet temp. °C
                  : 38...42
                                                                100H.: (0.9)
                                                                1/min: 300.0
Overflow valve
                                                  2nd speed
                  : 1 417 413 025
                                                  Contr.-rod trav. m: 6.2...6.6
                                                  Del.quantity cm3/: 1.6...2.2
                                                               100H.: (1.3...2.5)
cm3/: 0.6
100H.: (1.0)
Inlet press., bar: 1.50
                                                  Dispersion
Overflow
 quantity min. 1/h: 100...120
                                                  (B) Setting of injection pump with
Calibrating nozzle-holder
                                                      externally-mounted governor
 assembly
            : 1 688 901 019
                                                  SLEEVE TRAVELS
                                                  1st speed 1/min: 300
Opening
                                                  Sleeve travel mm: 1.20...1.40
2nd speed 1/min: 600
pressure, bar
                  : 207...210
                                                    Sleeve travel mm: 4.90...5.10
Perforated-plate
                                                  3rd speed 1/min: 1075
diameter mm
                  : 0,8
                                                    Sleeve travel mm: 7.40...7.60
                                                  4th speed 1/min: 1100
                                                   Sleeve travel mm: 8.00...8.20
Test inj. tubing : 1 680 750 067
                                                  5th speed 1/min: 1150
                                                    Sleeve travel mm: 9.00...9.20
Outside diameter
x Wall thickness
x Length mm
                 : 6.00x1.50x1000
                                                  SLEEVE POSITION
                                                  Control-lever position
                                                              Degree: -1
(A) Injection pump setting values
   Insp. values in parentheses
Set constant delivery quant.
                                                               17min: 1090
                                                  Cont.-rod travelmm: 16.50...18.00
    per values
                                                  FULL-LOAD DELIV. AT FULL-LOAD STOP
M25
```

3rd pressure hPa : 820 1st version : 15.00...15.10 C-rod trav.mm Speed 1/min: 600 4th pressure hPa : 1100 Charge press. hPa : 680 : 16.00...16.10 C-rod trav.mm Del. quantity cm3/: 216.0...218.0 1000H.: (213.0...221.0) Dispersion cm3/: 5.00 5th pressure hPa : 150 : 11.50...11.70 G-rod trav.mm 1000H .: (9.00) SWITCH-OVER POINT HIGHEST RATED SPEED 1/min : 220 (240) Speed 1st version FUEL-DELIVERY CHARACTERISTICS Control-lever position degrees: 50...58 1st version Charge press. hPa: 1150 Testing: Seed 1/min : 1050 1st c-rod trav.mm : 14.40 1/min : 1095...1110 %el.quantity cm3/ : 229.0...232.0 Speed 2nd c-rod trav.mm : 4.00 1000H.: (226.0...235.0) Dispersion cm3/: 8.00 1000H.: (12.0) Charge press. hPa : 1150 1/min : 1160...1190 1/min : 1300 Speed 4th speed C-rod trav.mm : 0.00...1.50 1/min : 850 Speed LOWEST RATED SPEED I Del.guantity cm3/: 247.0...251.0 1000H.: (244.0...254.0) cm3/: 8.00 Control-lever position degrees: 15...23 Dispersion 1000%.: (12.0) Testing: Charge press. hPa : -Speed 1/min : 100 C-rod trav.mm min : 7.90 Speed 1/min : 300 ROTATIONAL-SPEED LIMITATION : 6.20...6.40 C-rod trav.mm 1st version CONSTANT REGULATION 1mm control-rod travel less than 1/min: 300...500 Speed full-load trav.mm: 14.40 TORQUE CONTROL 1/min: 1095...1110 Speed Dimension a mm : 0,40 1/min : 1050 STARTING FUEL DELIVERY 2nd speed C-rod trav.mm : 15.40...15.70 3rd speed 1/min : 850 C-rod trav.mm : 16.00...16.20 Speed 1/min : 100 Del.quantity cm3/: 200.0...220.0 1000H.: (196.0...224.0) Adjustment test, manifold-pressure compensator (LDA, ADA, ALDA) Remarks: 1st version Setting 1/min : 600 Speed Pressure hPa : 680 Contr.-rod trav.mm: 14,80...15.00 Measurement 1/min : 600 Speed 1st pressure hPa : 310 : 12.20...12.40 C-rod trav.mm 2nd pressure hPa : 470

C-rod trav.mm

: 13.80...14.00

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet : MB 14,7 B 1 Edition : 09.10.87 Superceeded : 12.9.86
Calibrating oil : ISO-4113
                   : 0 402 648 825
Combination no.
Injection pump
Pump designation : PE8P120A320L$7801
EP type number
                  : 0 412 628 806
Governor
Governor ** RQV300..1050PA797-3
Governer 65. : 0 421 813 627
Customer-spec. information
Customer
                  : DAIMLER-BENZ
Engine
                  : 0M442 A
1st version kW : 260.0
Speed 1/min: 2100
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                  : 38...42
Overflow valve
                   : 1 417 413 025
Inlet press., bar : 1.50
Over flow
 quantity min. 1/h: 100...120
Calibrating nozzle-holder
 assembly : 1 688 901 019
Opening
 pressure, bar
                  : 207...210
Perforated-plate
 diameter mm
                  : 0,8
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                 : 6.00x1.50x1000
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values
```

```
START OF DELIVERY
Test pressure, bar: 25...27
                                                       1st version
                                                       Speed
                                                                     1/min: 600
                                                      Charge press. hPa : 650
Del.quantity cm3/ : 196.0...198.0
1000H.: (193.0...201.0)
                    : 5.20...5.30
Prestroke mm
                    : (5.15...5.35)
Contr.-rod trav.mm: 20.00...21.00
                                                                    cm3/ : 5.00
Cam sequence
                    : 8- 7- 2- 6- 3- 5-
                                                       Dispersion
                                                                    1000H.: (9,00)
                                                      HIGHEST RATED SPEED
SD ang. spacing CS: 0-45-90-135-180-225-
                                                       1st version
                      270-315
                                                       Control-lever
Tolerance + - 0
                    : 0.50 (0.75)
                                                        position degrees: 49...57
SD mark cyl. no. : 8
                                                       Testing:
                                                       1st c-rod trav.mm : 11.80
BASIC SETTING
                                                                   1/min : 1090...1100
                                                         Speed
                                                       2nd c-rod trav.mm : 4.00
                                                         Speed 1/min: 1155...1185
1st speed
               1/mi: 600
                                                       4th speed 1/min: 1300
Contr.-rod trav.mm: 13.90...14.00
                                                                           : 0.00...1.50
                                                         C-rod trav.mm
Del.quantity cm3/ : 19.6...19.8
                                                      LOWEST RATED SPEED I
                                                       Control-lever
               100H.: (19.3...20.1)
                                                       position degrees: 15...23
Dispersion
               cm3/:0.5
                                                      Testing:
                                                      Speed
                                                                    1/min : 100
                                                      C-rod trav.mm min: 7.70
Speed 1/min: 300
               100H.: (0.9)
              1/min: 300.0
2nd speed
                                                      C-rod trav.mm
                                                                           : 6.20...6.40
Contr.-rod trav. m: 6.2...6.6
Del.quantity cm3/: 1.6...2.2
                                                      CONSTANT REGULATION
                                                                   1/min : 300...450
               100H.: (1.3...2.5)
                                                      Speed
              cm3/: 0.6
100P: (1.0)
Dispersion
                                                      TORQUE CONTROL
                                                      Dimension a mm : 1.40
                                                      2nd speed 1/min: 1050
C-rod trav.mm: 12.60...12.80
3rd speed 1/min: 850
(B) Setting of is pation pump with
    externally-mounted governor
                                                      C-rod trav.mm : 13.70...13.90
4th speed 1/min : 700
SLEEVE TRAVELS
1st speed 1/min: 300
  Sleeve travel mm: 1.20...1.40
                                                         C-rod trav.mm : 14.20...14.40
2nd speed
           1/min: 600
  Sleeve travel mm: 4.90...5.10
                                                      Adjustment test, manifold-pressure
3rd speed 1/min: 1075
                                                       compensator (LDA, ADA, ALDA)
Sleeve travel mm: 7.40...7.60
4th speed 1/min: 1100
Sleeve travel mm: 8.00...8.20
                                                      1st version
5th speed 1/min: 1150
                                                      Setting
  Sieeve travel mm: 9.00...9.20
                                                                    1/min : 600
                                                      Speed
                                                                   hPa : 650
                                                      Pressure
                                                      Contr.-rod trav.mm: 13.80...14.00
SLEEVE POSITION
Control-lever position
             Degree: -1
                                                      Measurement
Speed 17min: 1090
Cont.-rod travelmm: 15.20...17.80
                                                                   1/min: 600
                                                      Speed
                                                      1st pressure hPa : 300
FULL-LOAD DELIV, AT FULL-LOAD STOP
                                                        C-rod trav.mm : 12.10...12.30
M28
```

```
2nd pressure hPa : 400
                    : 13.10...13.40
  C-rod trav.mm
3rd pressure hPa : 850
  C-rod trav.mm
                    : 13.90...14.00
SWITCH-OVER POINT
             1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1050
              1/min : 1050
Speed
Del.quantity cm3/ : 175.0...179.0
              1000H.: (172.0...182.0)
Dispersion
               cm3/:8.00
             1000H.: (12.0)
Charge press. hPa : 1050
              1/min : 700
Speed
Del.quantity cm3/: 209.0...213.0
             1000H.: (206.0...216.0)
               cm3/ : 8.00
Dispersion
             1000H.: (12.0)
Charge press. hPa: 1050
              1/min: 850
Speed
Del.quantity cm3/: 203.0...207.0
1000H.: (200.0...210.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 11.80
             1/min : 1090...1100
Speed
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 175.0...190.0
1000H.: (171.0...194.0)
Remarks:
```

:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : MB 14.7 F Edition : 18.09.87 Superceeded : -Calibrating oil : ISO-4113 Combination no. : 0 402 648 832 Injection pump Pump designation : PE8P120A320LS7810 EP type number : 0 412 628 819 Governor Governor design. : RQ300/1050PA858 Governer no. : 0 421 801 398 Customer-spec. information Customer : DAIMLER-BENZ : 0M442 LA Engine 1st version kW : 368.0 Speed 1/min: 2100 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Overflow quantity min. 1/h: 100...120 Calibrating nozzle-holder : 1 688 901 019 assembly -Opening | pressure, bar : 207...210 Perforated-plate diameter mm : 0,8 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

```
START OF DELIVERY
Test pressure, bar: 25...27
                                                    1st version
                                                    Speed 1/min: 000
Charge press. hPa: 900
Del.quantity cm3/: 239.0...241.0
1000H.: (236.0...244.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                                                                  1/min: 600
                                                    Speed
                   : 5.20...5.30
: (5.15...5.35)
Prestroke mm
Contr.-rod trav.mm: 19.50...21.00
                   : 8- 7- 2- 6- 3-
Cam sequence
                                                    HIGHEST RATED SPEED
SD ang. spacing CS: 0-45-90-135-180-225-
                                                    1st version
                     270-315
Tolerance + - 0
                    : 0.50 (0.75)
                                                    Setting point:
                                                    Speed 1/min: 600
                                                    Contr.-rod trav.mm: 20.0
SD mark cyl. no. : 8
BASIC SETTING
                                                    Testing:
                                                    1st c-rod trav.mm : 14.10
                                                      Speed 1/min: 1095...1110
           1/mi: 600
1st speed
                                                    2nd c-rod trav.mm: 4.00
                                                      Speed 1/min: 1145...1175
th speed 1/min: 1300
Contr.-rod trav.mm: 14.30...14.50
                                                    4th speed
Del.quantity cm3/: 23.9...24.1
                                                      C-rod tray.mm : 0.00...1.50
              100H.: (23.6...24.4)
                                                    LOWEST RATED SPEED I
                                                    Setting point w/out aux. spring
                                                    Speed 1/min: 300
Dispersion
              cm3/:0.5
                                                    Contr.-rod trav.mm: 5.9
              100H.: (0.9)
                                                    Testing:
              1/min: 300.0
                                                                 1/min : 200
2nd speed
                                                    Speed
                                                    C-rod trav.mm min: 8.00
Contr.-rod trav. m: 6.2...6.6
Del.quantity cm3/ : 1.6...2.2
                                                    Speed 1/min: 300
              100H.: (1.3...2.5)
                                                    C-rod trav.mm : 5.80...6.10
C-rod trav.mm : 2.00
              cm3/: 0.6
100H.: (1.0)
Dispersion
                                                                1/min: 370...410
                                                    Speed
                                                    TORQUE CONTROL
(B) Setting of injection pump with
    externally-mounted governor
                                                    Dimension a mm : 0.35
                                                    2nd speed 1/min: 1050
                                                      C-rod trav.mm : 15.10...15.30
SLEEVE TRAVELS
                                                    3rd speed 1/min: 800
1st speed 1/min: 300
Sleeve travel mm: 2.90...3.10
2nd speed 1/min: 600
                                                      C-rod trav.mm : 13.30...15.50
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 950
                                                    Adjustment test, manifold-pressure
                                                     compensator (LDA, ADA, ALDA)
  Sleeve travel mm: 6.20...6.40
4th speed 1/min: 1110
  Sleeve travel mm: 6.50...7.00
                                                    1st version
5th speed 1/min: 1160
                                                    Setting
  Sleeve travel mm: 9.50,..10.00
                                                                 1/min : 600
                                                    Speed
                                                    Pressure
                                                                 hPa : 900
                                                    Contr.-rod trav.mm: 14.30...14.50
SLEEVE POSITION
Control-lever position
             Degree: -2
                                                    Measurement
                                                                1/min: 600
              17min: 600
                                                    Speed
Speed
Cont.-rod travelmm: 19.20...20.80
                                                    1st pressure hPa : 320
                                                     C-rod trav.mm : 9.90...10.10
FULL-LOAD DELIV, AT FULL-LOAD STOP
```

NO3

```
2nd pressure hPa : 620
                    : 13.00...13.20
  C-rod trav.mm
3rd pressure hPa : 1100
  C-rod trav.mm
                    : 14.40...14.50
SWITCH-OVER POINT
             1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1500
Speed 1/min: 1050
Del.quantity cm3/: 257.0...260.0
1000H:: (254.0...263.0)
Dispersion
              cm3/:8.00
             1000H.: (12.0)
Charge press. Pa : 1500
Speed
             1/min: 800
Del.quantity cm3/: 265.0...269.0
             1000H.: (262.0...272.0)
             cm3/: 8.00
1000H.: (12.0)
Dispersion
Charge press. hPa : -
             1/min : 500
Speed
Del.quantity cm3/: 133.0...135.0
             1000H.: (130.0...138.0)
cm3/: 8.00
Dispersion
             1000H.: (12.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 14.10
             1/min: 1095...1110
Speed
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 220.0...240.0
1000H.: (216.0...244.0)
Remarks:
```

```
START OF DELIVERY
                                                        Testing:
Test pressure, bar: 25...27
                                                        1st c-rod trav.mm : 14.90
                                                                     1/min : 750...755
                                                           Speed
Prestroke mm
                     : 5.20...5.30
                                                        2nd c-rod trav.mm : 4.00
                                                                    1/min: 775...788
1/min: 900
                     : (5.15...5.35)
                                                          Speed
Contr.-rod trav.mm: 19.00...21.00
Cam sequence : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7
                                                        4th speed
                                                                             : 0.30...1.70
                                                          C-rod trav.mm
                                                        LOWEST RATED SPEED I
                                                        Control-lever
                                                         position degrees: 9...17
SD ang. spacing CS: 0-45-60-105-120-165-
                                                        Setting point w/out aux. spring
                                                        Speed 1/min: 350
Contr.-rod trav.mm: 5.2
Speed 1/min: 350
C-rod trav.mm: 5.10...5.30
                       180-225-240-285-300-
                       345
Tolerance + - D
                     : 0.50 (0.75)
SD mark cyl. no. : 12
                                                        SET IDLE AUXILIARY SPRING
BASIC SETTING
                                                        Contr.-rod trav.mm: 2.00
               1/mi: 700
1st speed
                                                        ROTATIONAL-SPEED LIMITATION
Contr.-rod trav.mm: 15.90...16.00
                                                        1st version
Del.quantity cm3/: 26.7...26.9
                                                        1mm control-rod travel less than
               100H.: (26.4...27.2)
                                                         full-load trav.mm: 13.10
                                                        Speed
                                                                      1/min : 750...755
Dispersion
               cm3/:0.5
                                                        STARTING FUEL DELIVERY
               100H.; (0.9)
2nd speed
               1/min: 350.0
                                                                      1/min : 100
                                                        Del.quantity cm3/: 240.0...260.0
1000H.: (236.0...264.0)
Contr.-rod trav. m: 5.1...5.3
Del.quantity cm3/: 1.4...2.0
               100H.: (1.1...2.3)
cm3/: 0.8
100H.: (1.2)
Dispersion
                                                        Remarks:
SLEEVE POSITION
                                                        APPLICATION
Control-lever position
                                                        Generator
             Degree: -3
              17min: 800
Speed
Cont.-rod travelmm: 0.30...1.00
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
               1/min: 700
Speed
Del.quantity cm3/: 267.0...269.0
             1000H.: (264.0...272.0)
cm3/: 5.00
1000H.: (9.00)
Dispersion
HIGHEST RATED SPEED
```

1st version Control-lever

position degrees: 23...31

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 1- 2- 7- 3- 4- 5-
                                                       Cam sequence
Note inst. in remarks column
                   : SCA 14.2 E
: 18.09.87
Test sheet
Edition
                                                       SD ang. spacing CS: 0-45-90-135-180-225-
Superceeded
                   : 10.84
Calibrating oil : ISO-4113
                                                                             270-315
                                                       Tolerance + - B
                                                                           : 0.50 (0.75)
Combination no.
                    : 0 402 678 801
                                                       SD mark cyl. no. : 1
Injection pump
Pump designation : PE8P120A920/4LS7002-
                                                       BASIC SETTING
                    : 0 412 628 805
                                                                      1/mi: 700
EP type number
                                                       1st speed
Governor
Governor design.
                                                       Contr.-rod trav.mm: 13.20...13.30
                    : RSV350...1050P1/504
Governer no.
                    : 0 421 833 147
                                                       Del.quantity cm3/: 18.7...18.9
Customer-spec. information
                   : SAAB-SCANIA
                                                                     100H.: (18.4...19.2)
Customer
                    : DS14 42
                                                                     cm3/:0.6
Engine
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.9)
Calibrating-oil inlet temp. C
                                                                     1/min: 350.0
                                                       2nd speed
                                                      Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/: 1.0...1.4
100H.: (-)
Dispersion cm3/: 0.3
100H.: (0.6)
                    : 38...42
Overflow valve
                    : 1 417 413 025
Inlet press., bar: 1.50
                                                       SLEEVE POSITION
Calibrating nozzle-holder
                                                       Control-lever position
                   : 1 688 901 019
 assembly
                                                                    Degree: -3
                                                                     17min: 800
Opening
                                                      unt.-rod travelmm: 0.30...1.00
 pressure, bar
                   : 207...210
                                                      Governor-spring reload
                                                      Notch setting x : 6.00
Perforated-plate
                    : 0,8
 diameter mm
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 1 680 750 015
Test inj. tubing
                                                       1st version
                                                      Speed 1/min: 700
Del.quantity cm3/: 187.0...189.0
1000H.: (184.0...192.0)
Dispersion cm3/: 6.00
Outside diameter
x Wall thickness
                    : 6.00x1.50x600
x Length mm
                                                                    1000H.: (9.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      HIGHEST RATED SPEED
                                                      1st version
    per values
                                                      Control-lever
START OF DELIVERY
                                                       position degrees: 60...68
Test pressure, bar: 25...27
                                                      Testing:
                    : 5.00...5.10
                                                      1st c-rod trav.mm : 12.20
Prestroke mm
                    : (4.95...5.15)
                                                         Speed
                                                                  1/min : 1090...1100
NO7
```

```
2nd c-rod trav.mm : 4.00
Speed 1/min: 1160...190
4th speed 1/min: 1300
  C-rod trav.mm : 0.30...1.70
LOWEST RATED SPEED I
Control-lever
 position degrees: 27...35
Setting point w/out aux. spring
             1/min : 350
Speed
Contr.-rod trav.mm: 4.0
Speed 1/min: 350
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min: 440...500
FUEL-DELIVERY CHARACTERISTICS
1st version
              1/min : 1000
Speed
Del.quantity cm3/: 184.0...192.0
1000H.: (182.0...194.0)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 12.20
          1/min : 1090...1100
Speed
STARTING FUEL DELIVERY
Spee®
             1/min : 100
Del. quantity cm3/: 240.0...290.0 Contragrad trav.mm: 20.00...21.00
LOW IDLE
             1/min : 350
Speed
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/: 10.0...14.0
Dispersion cm3/: 3.00
1000H.: (6.00)
Remarks:
                    : CASE
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring
preload on new delivery-valve holders
to 2.9...3.1 mm.
```

For comb. with letter index see VDT-I-400/116.

Scania test specifications taken over on 1983-10-05 Engine start of delivery: 18° BTDC

ADDITIONAL INFORMATION

APPLICATION

Tractor (tractor engines)

```
Control-lever
 position degrees: 18...24
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...24
peed 1/min: 200
Speed
                 : 10.80...14.20
C-rod trav.mm
C-rod trav.mm
                   : 8.00
            1/min : 300
1/min : 400
Speed
Speed
Carod trav.mm max: 5.00
C-rod trav.mm : 0.01
            1/min : 485...590
Speed
LOWEST RATED SPEED II
Control-lever
position degrees: 24...30
Setting point w/out aux. spring:
            1/min : 375
Contr.-rod trav.mm: 8.00
Testing:
Speed 1/min: 200
Contr.-rod trav.mm: 14.3...17.2
Speed 1/min: 300
Contr.-rod trav.mm: 10.3...11.8
             1/min : 500
Speed
Contr.-rod trav.mm: 1.9...3.7
Speed
            1/min : 720
Contr.-rod trav.mm: 0.01
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 17.00
Speed 1/min: 1055...1075
Speed
Remarks:
Stamp prestroke dimension into pump
housing
Stamp dimension "O". Control-rod
travel "0" corresponds to 1.0 mm
clearance of the control-collar
capsule from the end-face stop plate.
Set idle stop at 300 min. -1
                               to a
control-rod travel of 8.0 mm
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                         SD ang. spacing CS: 0-27-72-99-144-171-
                                                                                216-243-288-315
Test sheet
                     : MTU 37,4 C
                                                         Tolerance + - 0
                     : 20.10.87
                                                                              : 0.50(0.75)
Edition
Superceeded
Calibrating oil
                    : ISO-4113
                                                         BASIC SETTING
                     : 0 406 039 111
                                                                         1/mi: 1000
Combination no.
                                                         1st speed
Injection pump
                                                         Contr.-rod trav.mm: 15.00
Pump designation : PE10ZWM160/120ZWA68R
EP type number
                     : 0 416 069 001
                                                         Del.quantity cm3/: 51.5...53.5
Governor
Governor design.
                     : RQU425/1200ZWA68R
                                                                       100F.: (51.0...54.0)
Governer no.
                     : 0 422 407 036
                                                                       cm3/:1.5
                                                         Dispersion
Customer-spec. information
                                                                       100H.: (2.2)
Customer
                     : MTU
                     : MB 838 KA
Engine
                                                                       1/min: 1000
                                                         2nd speed
                                                        2nd speed 1/min: 1000

Contr.-rod trav. m: 9.00

Del.quantity cm3/: 26.5...28.5

100H.: (26.0...29.0)

Dispersion cm3/: 1.5

100H.: (2.2)

3rd speed 1/min: 300
1st version kW : 100
Speed
               1/min: 2400
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                         Contr.-rod trav.mm: 9.00
                                                        Del.quantity cm3/: 15.0...18.0
100H:: (14.5...18.5
Dispersion cm3/: 2.0
100H:: (3.0)
                     : 40...45
Overflow valve
                     : 1 417 413 025
Inlet press., bar : 1.50
                                                         SLEEVE POSITION
                                                         Control-lever position
Calibrating nozzle-holder
                                                                      Degree: -1
 assembly
                    : 0 681 443 022
                                                         Speed
                                                                       17min: 1200
                                                         Cont.-rod travelmm: 18.00...18.50
Opening
 pressure, bar
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
                    : 172...175
                                                         1st version
Test inj. tubing
                    : 1 680 750 016
                                                         Speed
                                                                       1/min: 1200
                                                        Del.quantity cm3/: 505.0...515.0
1000H.: (500.0...520.0)
Dispersion cm3/: 15.0
1000H.: (22.0)
Outside diameter
x Wall thickness
                     : 8,00X2,00X1500
x Length mm
                                                        HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                         1st version
    per values
                                                        Control-lever
                                                         position degrees: 52...58
START OF DELIVERY
                                                        Testing:
                     : 2.50...2.60
Prestroke mm
                                                         1st c-rod trav.mm : 15.00
                     : (2.45...2.65)
                                                           Speed 1/min: 1200
Contr.-rod trav.mm: 12.00
                                                        2nd c-rod trav.mm : 14.00
Cam sequence : 10-3-4-5-6-7-8-1-2-9
                                                                     1/min : 1225...1240
                                                           Speed
N11
```

```
3rd c-rod trav.mm : 4.00
           1/min: 1312...1352
  Speed
4th speed 1/min: 1339...1389
  C-rod trav.mm : 0.01
LOWEST RATED SPEED I
Control-lever
 position degrees: 20...26
Setting point w/out aux. spring
          1/min : 425
Speed
Contr.-rod trav.mm: 6.80
Testing:
            1/min : 200
Speed
C-rod trav.mm min: 18.00
Speed 1/min: 300
               : 12.60...16.60
C-rod trav.mm
                  : 6.80
C-rod trav.mm
            1/min : 425
Speed
            1/min : 1275
Speed
C-rod trav.mm max : 0.01
C-rod trav.mm
                : 1.50
         1/min : 600...1200
Speed
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 14.00
Speed
           1/min : 1225...1240
HIGH IDLE
1st version
Contr.-rod trav.mm: 4.00
           cm3/: 12.0
1000H.: (-)
Dispersion
LOW IDLE
            1/min : 425
Speed
Contr.-rod trav.mm: 6.80
Del.quantity cm3/: 104.0...111.0
            1000H.: (-)
            cm3/; 10.0
1000H.; (-)
Dispersion
Remarks:
                  e
V
Set idle stop at 425 min. -1
                               to a
control-rod travel of 6.8 mm.
Limit shutoff stop screw to 1.0 mm.
```

APPLICATION

Special-purpose vehicle

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
                     : MWM 5.9 H
: 21.05.87
Test sheet
Edition
                                                         SD mark cyl. no. : 1
Superceeded
                                                         START OF DELIVERY DIFFERENCE
Calibrating oil
                     : ISO-4113
Combination no.
                     : 9 400 085 270
                                                         betw.c-rod trav.mm: 9.00...12.00
                                                         & c-rod tray max. : 21.00
Difference CS : 3.00...4.00
Injection pump
Pump designation
                    : PES6A90D320RS2718
                     : 9 400 084 003
                                                         BASIC SETTING
EP type number
Governor
                     : RSV350...1400A2B2215
                                                                         1/mi: 1400
Governor design.
                                                         1st speed
                       -1R
                     : 9 420 083 231
                                                         Contr.-rod trav.mm: 8.50...8.60
Governer no.
                                                         Del.quantity cm3/: 6.1...6.2
Customer-spec. information
Customer
                     : MWM
                                                                        100H.: (5.9...6.4)
Engine
                     : D229/6
                                                         Dispersion
                                                                        cm3/:0.3
TEST BENCH REQUIREMENTS
                                                                        100H.: (0.5)
Calibrating-oil inlet temp. C
                                                        2nd speed 1/min: 350.0
Contr.-rod trav. m: 5.4...5.6
Del.quantity cm3/: 1.1...1.5
100H.: (0.9...1.7)
                     : 38...42
Overflow valve
                     : 1 417 143 046
                                                                        cm3/:0.2
                                                         Dispersion
                                                                        100H.: (0.4)
Inlet press., bar : 1.00
                                                         SLEEVE POSITION
Calibrating nozzle-holder
                                                         Control-lever position
                   : 0 681 343 009
 assembly
                                                                      Degree: -3
1/min: 800
Opening
                                                         Speed
                                                         Cont.-rod travelmm: 0.30...1.00
pressure, bar
                    : 172...175
                                                         Governor-spring reload
Test inj. tubing
                     : 1 680 750 014
                                                         Notch setting x : 5.00
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                     : 6.00X2.00X600
                                                         1st version
x Length mm
                                                         Speed
                                                                        1/min: 1400
                                                        Del.quantity cm3/: 61.5...62.5
1000H.: (59.5...64.5)
Dispersion cm3/: 3.00
1000H.: (5.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values
                                                        HIGHEST RATED SPEED
START OF DELIVERY
Test pressure, bar: 25...27
                                                         1st version
Prestroke mm
                     : 2.70...2.80
                                                         Control-lever
                     : (2.65...2.85)
                                                         position degrees: 55...63
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6-
                                        2- 4
                                                         Testing:
                                                         1st c-rod trav.mm : 7.50
```

Speed 1/min: 1440...1450 2nd c-rod trav.mm: 4.00 Speed 1/min: 1475...1505 3rd c-rod trav.mm : 4.00 4th speed 1/min: 1650 C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I Control-lever position degrees: 21...29 Setting point w/out aux. spring 1/min : 350 Speed Contr.-rod trav.mm: 5.0 Testing: 1/min : 100 Speed G-rod trav.mm min: 19.00 Speed 1/min: 350 C-rod trav.mm : 5.40...5.50 C-rod trav.mm : 2.00 1/min : 560...620 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1400 C-rod trav.mm : 8.50...8.60 2nd speed 1/min: 500 C-rod trav.mm : 9.10...9.20 4th speed 1/min: 900 C-rod trav.mm : 8.80...9.10 FUEL-DELIVERY CHARACTERISTICS 1st version 1/min : 500 Speed Del.quantity cm3/: 56.0...58.0 1000H: (53.5...60.5) Speed 1/min: 900 Del.quantity cm3/: 64.0...66.0 1000H.: (61.5...68.5) ROTATIONAL-SPEED LIMITATION 1st version 1mm control-rod travel less than full-load trav.mm: 7.50 1/min : 1440...1450 Speed MIDDLE RATED SPEED Contr.-red trav.mm: 4.00 STARTING FUEL DELIVERY Speed 1/min : 100

LOW IDLE

:

Remarks:

Contr.-rod trav.mm: 19.00...21.00

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 4.0 D : 24.07.87

Calibrating oil : ISO-4113

Combination no. : 9 400 085 289

Injection pump

Pump designation : PES4A90D410R82729 EP type number : 9 400 084 009

Governor

Governor design. : RQV300...1300AB1228L Governer no. : 9 420 080 231

Customer-spec. information

Customer : DAIMLER-BENZ-BRASIL.

: 0M364A/L911 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar : 1.00

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter

x Wall thickness

x Length mm : 6.00X2.00X600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 2.00...2.10 Prestroke mm

: (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2

	l Testing:
SD ang. spacing ⁶ CS: 0-90-180-270 Tolerance + - 0.50 (0.75)	I 1st c-rod trav.mm : 12.70 I Speed 1/min : 13401350
BASIC SETTING	i 2nd c-rod trav.mm : 4.00 l Speed 1/min : 14751505
	I 3rd c-rod trav.mm : 4.00 I 4th speed 1/min : 1600
1st speed	C-rod trav.mm : 0.001.00
Contrrod trav.mm: 13.7013.80	I LOWEST RATED SPEED I
Del.quantity cm3/: 8.48.5	Control-lever position degrees: 1826
100H.: (8.28.7)	1
Dispersion cm3/: 0.3	Testing: Speed 1/min: 100
100H.: (0.5)	C-rod trav.mm min : 10.20 Speed 1/min : 300
	C-rod trav.mm : 8.608.80
2nd speed 1/min: 300.0	1 C-rod trav.mm : 2.00
Contrrod trav. m: 8.99.1	l Speed 1/min : 570630
Del.quantity cm3/: 0.71.1 100H.: (0.51.3)	TORQUE CONTROL
Dispersion cm3/: 0.2	1 Torque-control curve - 1st version
100H.: (0.4)	1 1st speed 1/min : 1300
	1 C-rod trav.mm : 13.7013.80
(B) Setting of injection pump with	l 2nd speed 1/min: 500
externally-mounted governor	1 C-rod trav.mm : 15.2015.30
OLECVE TRAVELS	3rd speed 1/min : 850 C-rod trav.mm : 14.8015.00
SLEEVE TRAVELS 1st speed	1 4th speed 1/min: 1000
Steeve travel mm: 8.508.60	1 C-rod trav.mm : 14.3014.60
2nd speed 1/min: 300	1
Sleeve travel mm: 0.701.30	Adjustment test, manifold-pressure
3rd speed 1/min: 500	compensator (LDA,ADA,ALDA)
Sleeve travel mm: 2.202.60	
4th speed 1/min: 900	4.4
Sleeve travel mm: 4.905.10	1 1st version
SLEEVE POSITION	I Setting I Speed 1/min: 500
Control-lever position	Pressure hPa : 700
Degree: -1	Contrrod trav.mm: 15.2015.30
Speed 17min: 1380	1
Controd travelmm: 15.2017.80	Measurement 500
FULL-LOAD DELIV. AT FULL-LOAD STOP	Speed 1/min: 500
FOLE-LOAD DELIV. AT FOLE-LOAD STOP	l 1st pressure hPa ; -
1st version	C-rod trav.mm : 13.5013.60
Speed 1/min: 1300	2nd pressure hPa : 570
Charge press, hPa : 700	2nd pressure hPa : 570 C-rod trav.mm : 14.8014.90
Deliguantity cm3/ : 84.585.5	1 3rd pressure hPa : 500
1000H.: (82.587.5)	C-rod trav.mm : 13.9014.10
Dispersion cm3/ : 3.00	CUITOU AVEA AAINI
1000H.: (5.00)	SWITCH-OVER POINT
HIGHEST RATED SPEED	Speed 1/min : 240 (260)
1st version	FUEL-DELIVERY CHARACTERISTICS
Control-lever i	
position degrees: 6169	
	l 1st version

```
Charge press. hPa: 700
Speed
             1/min : 500
Del.quantity cm3/: 81.0...83.0
1000H.: (78.5...85.5)
Charge press. hPa: 700
Speed
             1/min : 850
Del.quantity cm3/: 88.0...90.0
1000H.: (84.5...92.5)
Charge press. hPa : -
             1/min : 500
Speed
Del.quantity cm3/: 64.0...66.0
1000H.: (61.5...68.5)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 12.70
             1/min : 1340...1350
Speed
MIDDLE RATED SPEED
Contr.-rod trav.mm: 4.00
STARTING FUEL DELIVERY
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 9.0 F 3
Edition : 14.10.87
Superceeded : 3.3.87
Calibrating oil : ISO-4113

Combination no. : 9 400 230 017

Injection pump

Pump designation : PES8A75D32OR2463

Governor

Governor design. : RQV300...1500AB1059

Customer-spec. information Customer : IHC

: DV 550 C Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

Inlet press., bar : 2.5

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 9 681 230 702

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Prestroke mm : 1.95...2.05★

: (1.90...2.00)

Contr.-rod trav.mm: 10.70

Prestroke mm : 3.95...4.05 : (3.90...4.10) ±* Contr.-rod trav.mm: 10.70 Cam sequence : 1-8-7-3-6-5-4-2

```
C-rod trav.mm min: 8.20
                                                        Speed 1/min: 300
                                                        C-rod trav.mm : 5.40...7.30
C-rod trav.mm : 3.05
Speed 1/min : 450
SD ang. spacing<sup>0</sup>CS: 0-45-90-135-180-225-
                       270-315
Tolerance + - 0: 0.50(0.75)
                                                        Speed
                                                                      1/min : 600
BASIC SETTING
                                                        C-rod trav.mm max: 2.60
                                                                     1/min : 870
             1/mi: 1500
1st speed
                                                        C-rod tray.mm
                                                                            : 0.10
Contr.-rod trav.mm: 10.65...10.75
                                                        SWITCH-OVER POINT
                                                                      1/min: 150...230
Del.quantity cm3/ : 6.8...6.9
                                                        Speed
               100H.: (-)
                                                        FUEL-DELIVERY CHARACTERISTICS
               cm3/:0.2
Dispersion
                                                        1st version
               100H.: (-)
                                                        Speed
                                                                      1/min : 300 *
                                                        Del.quantity cm3/: 1.0...15.0 *
1000H.: (0...16.0)
Speed 1/min: 300**
Del.quantity cm3/: 36.0...46.0**
1000H.: (-)
2nd speed
             1/min: 300
Contr.-rod trav. m: 6.00
Del.quantity cm3/: 1.6...2.0**
100H.: (-)
SLEEVE POSITION
                                                        ROTATIONAL-SPEED LIMITATION
Control-lever position
             Degree: -1
1/min: 1600
                                                        1st version
Cont.-rod travelmm: 15.00...18.50
                                                        1mm control-rod travel less than
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                         full-load trav.mm: 9.70
                                                                    1/min : 1600...1610
                                                        Speed
1st version
                                                        STARTING FUEL DELIVERY
               1/min: 1500
Speed
Del.quantity cm3/: 68.0...69.0
1000H.: (64.5...70.5)
                                                        Speed 1/min: 100
Del.quantity cm3/: 112.0...135.0
1000H.: (-)
HIGHEST RATED SPEED
1st version
Control-lever
                                                        LOW IDLE
 position degrees: 64...72
                                                                     1/min : 300
                                                        Speed
                                                        Del.quantity cm3/: 17.0...21.0
1000H.: (-)
Testing:
1st errod trav.mm : 9.70
  Speed 1/min: 1600...1610
2nd c-rod trav.mm : 9...14
                                                        Remarks:
  Speed 1/min: 1700
3rd c-rod trav.mm : 3.00...9.50
  Speed 1/min: 1800
                                                        * = Cylinders 1,7,6 and 4
4th speed 1/min : 2000
                                                        ** = Cylinders 2.8.3 and 5
  C-rod trav.mm : 0...0.10
LOWEST RATED SPEED I
Control-lever
position degrees: 6...14
```

Speed

Testing:

1/min : 200

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Note inst. in remarks column
                                                                         270-315
                                                    Tolerance + - 0
                   : IHC 9.0 F 4
: 14.10.87
Test sheet
                                                                       : 0.50(0.75)
Edition
Superceeded
                   : 11.3.87
                                                    BASIC SETTING
Calibrating oil
                   : ISO-4113
                                                    1st speed
                                                                  1/mi: 1500
Combination no.
                   : 9 400 230 017
                                                    Contr.-rod trav.mm: 9.30...9.40
Injection pump
                   : PES8A75D32OR2463
                                                    Del.quantity cm3/: 4.9...5.1
Pump designation
Governor
                   : RQV300...1500AB1060
                                                                 100H.: (-)
Governor design.
                                                    2nd speed
                                                                 1/min: 300
                                                    Contr. -rod trav. m: 6.00
Customer-spec. information
                                                   Del.quantity cm3/: 1.7...2.1**
Customer
                                                                 100H.: (-)
Engine
                   : DV 550 C
                                                    SLEEVE POSITION
                                                    Control-lever position
TEST BENCH REQUIREMENTS
                                                                Degree: 65...71
Calibrating-oil inlet temp. °C
                                                                 1/min: 1600
                                                    Speed
                   : 38...42
                                                    Cont.-rod travelmm: 15.00...18.50
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
Overflow valve
                   : 1 417 413 019
                                                    1st version
Inlet press., bar : 2.4
                                                    Speed
                                                                 1/min: 1500
                                                   Del.quantity cm3/: 49.0...51.0
                                                                1000H.: (-)
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                   HIGHEST RATED SPEED
Opening
 pressure, bar : 172...175
                                                    1st version
                                                    Control-lever
                                                    position degrees: 64...72
Test inj. tubing : 9 681 230 702
                                                    Testing:
Outside diameter
                                                    1st c-rod trav.mm : 9...14
                                                   Speed 1/min: 1700
3rd c-rod trav.mm: 3.00...9.50
x Wall thickness
x Length mm
                : 6,00x2,00x600
                                                              1/min : 1800
1/min : 2000
                                                      Speed
(A) Injection pump setting values
                                                    4th speed
    Insp. values in parentheses
Set constant delivery quant.
                                                      C-rod trav.mm : 0...0.10
    per values
                                                   LOWEST RATED SPEED I
                                                   Control-lever
START OF DELIVERY
                                                    position degrees: 6...14
                   : 1.95...2.05*
Prestroke mm
                                                   Testing:
                   : (1.90...2.00)
                                                                1/min : 200
                                                   Speed ~
Contr.-rod trav.mm: 10.70
                                                   C-rod trav.mm min : 8.20
                  : 3.95...4.05
                                                                1/min : 300
Prestroke mm
                                                   Speed
(3.90...4.10)**
Contr.-rod trav.mm: 10.70
                                                   C-rod trav.mm : 5.40...7.30
C-rod trav.mm : 3.05
Cam sequence : 1-8-7-3-6-5-4-2
                                                   Speed 1/min: 450
                                                               1/min : 600
                                                   Speed
```

```
C-rod trav.mm max: 2.60
Speed 1/min: 870
C-rod trav.mm
                   : 0.10
TORQUE CONTROL
Dimension a mm
Torque-control curve - 1st version
            1/min : 1500
1st speed
  C-rod trav.mm : 9.80...10.00
2nd speed 1/min: 1000
C-rod trav.mm: 9.80...10.00
3rd speed 1/min: 700
  C-rod trav.mm : 9.80...10.00
SWITCH-OVER POINT
Speed
              1/min : 150...230
FUEL-DELIVERY CHARACTERISTICS
1st version
              1/min : 1000
Speed
Del.quantity cm3/: 46.0...49.0
              1000H.: (-)
              1/min : 300
Speed
Del.quantity cm3/: 1.0...15.0*

1000H.: (-)

Speed 1/min: 300

Del.quantity cm3/: 36.0...46.0**

1000H.: (-)
ROTATIONAL-SPEED LIMITATION
1st version
1mm control-rod travel less than
 full-load trav.mm: 8.35
             1/min : 1605...1615
Speed
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 112.0, ... 135.0
1000H.: (-)
LOW IDLE
              1/min : 300
Speed
Del.quantity cm3/: 17.0...21.0
1000H.: (-)
Remarks:
\star = Cylinders 1,7,6 and 4
** = Cylinders 2,8,3 and 5
```

```
BOSCH-INJ.-PUMP TEST SPECIFICATIONS
                                                      Full-load del. w/out charge press.:
Note inst. in remarks column
                                                                    1/min: 1250
                                                      Speed
                                                      Del.quantity cm3/
Test sheet
                    : BMW 2,4 F
                                                                    1000H.: 26,0...27.0
Compl. date:
                    : 742
                                                      KSB solenoid-operated
Edition
                    : 26.08.87
                                                                      volt: -
                                                                      cm3/: 3.0
replaces
                                                      Dispersion
                    : ISO 4113
                                                                    1000H .: -
Calibrating oil
                    : VE 6/10F2300 R206
Injection pump
                                                      Low-idle speed regulation:
                    : 0 460 406 047
Type number
                                                                     1/min: 400
                                                      Speed
                                                      Charge press. hPa: 500
Customer-specific information
                                                      Del.quantity cm3/
1000H.: 6,0...10,0
Customer
                    : BMW
Engine
                    : M21D24W
                                                      KSB solenoid-operated
                                                       valve
                                                                      volt: -
                                                                      cm3/: 3,0
TEST BENCH REQUIREMENTS
                                                      Dispersion
                                                                    1000H.: -
Calibrating-oil oc
                                                      Full-load speed regulation:
 return temp.
with thermometer : 40...48
                                                      Speed
                                                                     1/min: 2500
                    : 42...50
                                                      Charge press. hPa: 500
electronically
                                                      Del.quantity cm3/
1000H: 11,5...17,5
Inlet press., bar: 0,35
                                                      KSB solenoid-operated
                                                      valve
                                                                     volt: -
Calibrating nozzle-holder
                                                                      cm3/: 5,0
                   : 1 688 901 022
 assembly
                                                      Dispersion
                                                                   1000H.: -
Opening
               bar : 130...133
                                                      Start:
pressure
                                                      Speed
                                                                    1/min: 100
Test inj. tubing : 1 680 750 073
                                                      Charge press. hPa: -
                                                      Del.quantity : 4 mind cm3/1000H.: -
                                                                          : 44,0...46,0
Outside diameter
x Wall thickness : 2
                                                      KSB solenoid-operated
             mm : 450
                                                       välve
                                                                     voit: -
x Length
                                                      Dispersion
                                                                      cm3/: -
Injection-pump setting values
                                                                   1000H.: 12.0
Test specifications in parentheses
                                                      Inspection-pump test specifications
Timing-device travel:
                                                      Test specifications in parentheses
             1/min: 1500
Speed
Charge press. hPa: 500
Setting value mm: 4,1...4,5
                                                      1st speed 1/min: 500
Charge press. hPa: 500
TD travel mm: 3,0...4,0
KSB solenoid-operated
                                                                        mm: (2,8...4,2)
 valve
               volt: -
                                                      KSB solenoid-operated
                                                       valve
                                                                     volt: 12,0
Supply-pump pressure:
                                                      2nd speed 1/min: 1000
Charge press. hPa: 500
Speed 1/min: 1500
Charge press. hPa: 500
Setting value bar: 5,9...6,5
                                                                       mm: 4,5...5,5
mm: (4,3...5,7)
                                                      TD travel
KSB solenoid-operated
                                                      KSB solenoid-operated
valve
                                                       valve
                                                                     volt: 12.0
               volt: -
```

```
3rd speed
                1/min: 750
                                                             Charge press. hPa: 500
                                                             KSB solenoid-operated
Charge press. hPa: 500
TD travel
                    mm: 0,8...1,6
                                                                              volt:
                                                              valve
                    mm: (0,5...1,9)
                                                             Del.quantity cm3/: 0...6,0
1000H.: -
KSB solenoid-operated
                 volt: -
                                                                             1/min: 2500
 valve
                                                             3rd speed
                1/min: 1500
                                                             Charge press. hFa: 5 KSB solenoid-operated
                                                                               hFa: 500
4th speed
Charge press. hPa: 500
                                                              valve
                                                                              volt: -
TD travel
                    mm:
                                                             Del.quantity cm3/: 11.5...17.5
1000H.: (10.5...18.5)
4th speed 1/min: 2300
                    mm: (3,6...5,0)
KSB solenoid-operated
                 volt:
 valve
                1/min: 2000
5th speed
                                                             Charge press.
                                                                               hPa: 500
Charge press. hPa: 500
                                                             KSB solenoid-operated
                    mm: 6.1...6.9
mm: (5,8...7,2)
TD travel
                                                              valve
                                                                              volt:
                                                             Del.quantity cm3/: 26.0...29.0
1000H.: (25.2...29.8)
5th speed 1/min: 1750
KSB solenoid-operated
 valve
                 volt: -
                                                             Charge press. hPa: 500
Supply-pump pressure characteristic:
                                                             KSB solenoid-operated
                                                              valve
                                                                              volt:
                                                             Del.quantity cm3/: 28,7...32,3
1000H.: (28,2...32,8)
                1/min: 500
1st speed
Charge press. hPa: 500
                                                                             1/min: 1250
Supply-pump
                                                             6th speed
                                                             Charge press. hPa: -100
KSB solenoid-operated
 pressure
                  bar: 3,1...3,7
KSB solenoid-operated
 valve
                 volt: -
                                                                              volt: -
                                                              valve
                                                             Del.quantity cm3/: 20.5...22.5
1000H.: (19.2...23.8)
7th speed 1/min: 1250
                1/min: 2000
2nd speed
Charge press. hPa: 500
Supply-pump
                                                                               hPa: 120
 pressure
                   bar: 7,2...7,9
                                                             Charge press.
KSB solenoid-operated
                                                             KSB solenoid-operated
 valve
                 volt: -
                                                              valve
                                                                              volt:
                                                             Del.quantity cm3/: 21,7...25,3
1000H.: (21,2...25,8)
8th speed 1/min: 1250
Overflow quantity at overflow valve:
                1/min: 500
                                                             Charge press. hPa: 500
1st speed
Charge press. hPa: 500
KSB solenoid-operated
                                                             KSB solenoid-operated
                                                                              volt: -
                                                              valve
                 volt: -
                                                             Del.quantity cm3/: -
 valve
                                                                             1000H: (24,2...28,8)
Oveflow
                      : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2300
Charge press. hPa: 500
KSB solenoid-operated
                                                                             1/min: 500
                                                             9th speed
                                                             Charge press. hPa: 500
KSB solenoid-operated
                                                                              volt:
                                                              valve
                                                             Del.quantity cm3/: 23,0...26,0
                 volt: -
 valve
Overflow
                      : 55...138
                                                                             1000H: (21,5...27,5)
 quantity cm3/10s: (40...153)
                                                             Zero delivery (stop):
Delivery-quant. and breakaway char.:
                                                             Electr. shutoff:
1st speed
                1/min: 1250
Charge-air pressure-setting
point
ADA stroke
                  hPa: 120
                                                                             1/min: 400
                                                             Speed
                   mm: 5,0
                                                             ELAB
                                                                              volt: -
                                                            Del.quantity cm3/: - max. 1000H.: -
KSB solenoid-operated
                 volt: -
 valve
Del.quantity cm3/: 21.7...25.3
1000H.: (21.2...25.8)
                                                             Idle delivery:
                1/min: 2650
2nd speed
N23
```

```
Mfg. date: until : -
1st speed
             1/min: 400
KSB solenoid-operated
 valve
               volt:
Del.quantity cm3/: -
1000H.: (4,0...12,0)
              1/min: 450
2nd speed
KSB solenoid-operated
               volt:
 valve
Del.quantity cm3/: -
1000H.: 0...6,0
Automatic starting fuel delivery:
              1/min: 200
1st speed
Charge press. hPa: -
KSB solenoid-operated
 valve
               volt: -
Del.quantity cm3/: 42,0...52,0
             1000H: -
 ind.
3rd speed
             1/min: 400
Charge press. hPa: -
KSB solenoid-operated
 valve
              volt: -
Del.quantity cm3/: 22,0...32,0
              1000H: -
4th speed
               1/mi: 480
Charge press. hPa : -
KSB solenoid-operated
               Volt: -
valve
Del.quantity
               cm3/; 17,7...22,3
               1000: -
Shutoff electromagnet:
Cut-in
min. voltage
                   : 10,0
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
                   : 3,2...3,4
               mm
KF
              mm
                   : 6,4...6,6
MS
              mm
                   : 1,4...1,6
                  3,9
17,0...19,0
SVS max.
              mm
XK
               mm
                  : 9,6...13,0
XL
              mm
Remarks:
```

```
Setting value bar: 6,3...6,9
BOSCH-INJ.-PUMP TEST SPECIFICATIONS
                                                  Full-load del. with charge press.:
Note inst. in remarks column
                                                   Speed
                                                                1/min: 1000
                                                  Charge press. hPa: 1000
                   : VOL 4,1 B
Test sheet
                                                  Del.quantity cm3/
1000H.: 76,5...77,5
Edition
                   : 14.10.87
replaces
                   : 04.86
                                                                cm3/:
Calibrating oil
                   : ISO 4113
                                                  Dispersion
                                                               1000H: 3.5
Injection pump
                   : VE 6/10F1800 L218-3
                   : D 460 416 053
Type number
                                                  Full-load del. w/cut charge press.:
                                                               1/min: 750
Customer-specific information
                                                  Del.quantity cm3/
                  : VOLVO-PENTA
Customer
                                                               1000H.: 57,5...58,5
Engine
                   : TD
                                                  Low-idle speed regulation:
Power
                 k: 91
                                                                1/min: 400
                                                  Speed
TEST BENCH REQUIREMENTS
                                                  Del.quantity
                                                                cm3/
                                                               1000H.: 12,0...16,0
                                                                 cm3/: -
                                                  Dispersion
Calibrating-oil oc
                                                               1000H.: 3.5
 return temp.
                   : 40...48
with thermometer
                                                  Full-load speed regulation:
electronically
                   : 42...50
                                                                1/min: 2000
                                                  Speed
                                                  Charge press. hPa: 1000
Inlet press., bar : 0.35
                                                  Del.quantity cm3/
                                                                1000H: 15,0...21,0
Calibrating nozzle-holder
                  : 1 688 901 022
 assembly
                                                  Start:
Opening
              bar : 130...133
                                                                1/min: 100
pressure
                                                  Speed
                                                  Del.quantity
                                                          cm3/1000H.: 90.0
                                                  mind
Test in i. tubing : 1 688 750 073
                                                  Inspection-pump test specifications
                                                  Test specifications in parentheses
Outside diameter
x Wall thickness : 2
               mm : 450
x Length
                                                                1/min: 750
                                                  1st speed
                                                  Charge press. hPa: 1000
Start of delivery
Prestroke
               mm : 0.3
                                                  TD travel
                                                                   mm: 1,1...1,9
                                                                   mm: (0,3,...2,7)
        (from BDC): +-0.02(0.04)
                                                  2nd speed
                                                                1/min: 1200
                                                  Charge press. hPa: 1000
Injection-pump setting values
Test specifications in parentheses
                                                  TD travel
                                                                   mm: 4,8...5,2
                                                                   mm: (4,0...6,0)
                                                                1/min: 1500
                                                  3rd speed
Timing-device travel:
                                                  Charge press. hPa: 1000
                                                                   mm: 6,2...6,8
mm: (5,3...7,7)
                                                  TD travel
             1/min: 1200
Speed
Charge press. hPa: 1000
                                                                1/min: 1800
                                                  4th speed
Setting value mm: 4,8...5,2
                                                  Charge press. hPa: 1000
                                                                   mm: 6,2...7,0
mm: (5,4...7,8)
                                                  TD travel
Supply-pump pressure:
             1/min: 1200
Charge press. hPa: 1000
                                                  Supply-pump pressure characteristic:
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N25

444 444 770	Del.quantity cm3/: 76,577,5
1st speed 1/min: 750	1000H.: (74,779,3)
Charge press. hPa: 1000	8th speed 1/min: 750
Supply-pump	Charge press. hPa: 1000 Del.quantity cm3/: 70,573,5
pressure bar: 5.25,8 1 2nd speed 1/min: 1200	vel.quantity cms/: (0,5/5,5
Character Post 1000	1000n: (07,0,,10,0)
Charge press. hPa: 1000	9th speed 1/min: 750
Supply-pump pressure bar: 6.36,9	Charge press. hPa: -
Indicate part 0,30,9	Del.quantity cm3/: 57.558.5
3rd speed 1/min: 1500	1000H: (55,760,3)
Charge press. hPa: 1000	Zono delivery (stor):
Supply-pump pressure bar: 7.07.6	Zero delivery (stop):
4th speed 1/min: 1800	Mech. shutoff:
Charge press. hPa: 1000	mech. Shutoff.
Supply-pump	Speed 1/min: 1800
pressure bar: 7,78,3	Del quantity om3/: 0 7
pressure bar. 1,11.1.0,0	Del.quantity cm3/: 03 1000H.: -
Overflow quantity at overflow valve:	100011.
1	Electr. shutoff:
1st speed 1/min: 750	ENGLE A SHALVII.
Charge press. hPa: -	Speed 1/min: 400
Oveflow : 4183	ELAB volt: -
quantity cm3/10s: (2698)	Del.quantity cm3/: 0,03,0
2nd speed 1/min: 1800	max. 1000H.: -
Charge press. hPa: 1000	max; 1000111;
Overflow : 55138	Idle delivery:
quantity cm3/10s: (40153)	• 4.0 40
1	Mfg. date: until : -
Delivery-quant. and breakaway char.:	1st speed 1/min: 400
	Del.quantity cm3/: 12,016.0
1st speed 1/min: 750	1000H.: (9,019,0)
Charge-air pressure-setting	2nd speed 1/min: 450
point hPa: 300	Del.quantity cm3/: 3.09.0
LDA stroke mm: 6,2	Del.quantity cm3/: 3.09.0 1000H.: (1.510,5)
Del.quantity cm3/: 63,564,5	3rd speed 1/min: 500
Del.quantity cm3/: 63.564.5 1 1000H.: (61.067.0)	Del.quantity cm3/: 0,03,0
2nd speed 1/min: 2050	1000H.: -
Charge press. hPa: 1000	
Del.quantity_cm3/: 0,06,0	Automatic starting fuel delivery:
10001.;	
3rd speed 1/min: 2000	1st speed 1/min: 400
Charge press. hPa: 1000	Del.quantity cm3/: -
Del.quantity cm3/: 15,021,0	ind. 1000H: 62,0
1000H.: (14,022,0)	
4th speed 1/min: 1950	2nd speed 1/min: 550
Charge press, hPa: 1000	Del.quantity cm3/: -
Del.quantity_cm3/: 37,045,0	ax. 1000H: 70,0
1000H.: (36,046,0)	At 4.66 . L. A
5th speed 1/min: 1800	Shutoff electromagnet:
Charge press. hPa: 1000	Contract to
Del.quantity cm3/: 72.076.0	Cut-in
1000H.: (70,078,0)	min. voltage : 18,0
6th speed 1/min: 1500	Rated voltage : 24,0
Charge press. hPa: 1000 Del.quantity cm3/: 74,078,0	Mounting and assembly dimensions:
1000H.: (73,079,0)	Mounting and assembly dimensions:
	Designation
7th speed 1/min: 1000 I Charge press. hPa: 1000 I	Designation K mm : -
f	KF mm: 5,25,5
'	151 HHO 1 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
1107	

MS SVS max. XK XL mm : 0,9...1,1 mm : 5,5 mm : 18,8...20,8 mm : 12,4...15,8

Remarks:

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